

HTB+

Cross laminated timber beams

Possible applications

The program measures cross-laminated timber elements that are stressed in terms of panels. The cross laminated timber consists of at least three layers of sawn timber glued together at right angles. The dimensioning takes place uniaxially and is idealized by a 1-meter strip and viewed as a beam.

System

- Single-span beams
- Multi-span beams
- Cantilever arms

Vertical loading

- Constant line load
- Point load
- Trapezoidal load

Cross-sections

- Any material made from soft-wood or special material parameters from approvals for cross laminated timber can be entered as user-defined values.
- Individual layer structure (number of layers, layer thickness, layer orientation length-ways/crossways).
- Optional forcing a symmetrical structure in the input

Design

The cross-laminated timber slab is regarded as a uniaxially tensioned beam element.

The design is carried out using the shear analogue method - so the static systems and the loads are not subject to the restrictions of the gamma method.

In the ultimate limit state of the load-bearing capacity, both the situation and the situation in the event of a fire are considered permanently/temporarily. The normal stress, the shear stress from shear force and the rolling shear stress are verified in each case.

The design in the event of fire is based on the staircase model and, if necessary, considers sloping layers.

In addition, the serviceability limit state is examined.

