

BACHELOR'S DISSERTATION AT STRUCTURAL MECHANICS

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THE CURRENT USE OF CLT AND IMPLEMENTATION OF NEW WOOD TYPES IN CLT



BACKGROUND

CLT (cross laminated timber) are solid boards of spruce glued together in layers. Each layer is orientated perpendicular to surrounding layers for increased strength in all directions. CLT is always composed of an uneven number of layers. The result is a building element that is stiff and durable. CLT is normally used in spans of 6-8 meters but can handle more.

CLT is currently used mostly for exterior and interior walls, floor structures and roofs.

There are many key arguments for using CLT. The material is lightweight and easy to mount. The weight makes the transportation more environmental friendly than using prefabricated concrete elements. The material itself is CO₂ neutral. CLT is highly resistance to fire, R60 is relatively easy to achieve.

OBJECTIVE AND METHOD

There are two main objectives to the project. The first is to look into CLT today, how it's used but also main ad-

vantages and disadvantages. The main purpose of this is to facilitate future work with CLT.

The second objective with the project is to test new types of wood in the different layers of the material. The wood types that are going to be tested are poplar, birch and hybrid aspen. One of the reasons of choosing a different type of wood is that spruce has low rolling shear strength compared to poplar, birch and hybrid aspen. Rolling shear strength is a crucial property for boards in CLT.

The first part of the study will be conducted with the help of a literature study. In the second part we will proof test specimens with different compositions in order to find out what combination of wood is best.

The project has been initiated by Agne Helmö. It is also supported by Sätuna AB, Savotech AB and Setra AB.

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