



Bending and Compressive Properties of Cross-Laminated Timber (CLT) Panels Made from Canadian Hemlock

<https://research.thinkwood.com/en/permalink/catalogue1734>

Author: He, Minjuan
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Publisher: ScienceDirect

Year of Publication: 2018

Country of Publication: Netherlands

Format: Journal Article

Material: CLT (Cross-Laminated Timber)

Topic: Mechanical Properties

Keywords: Hemlock
Out-Of-Plane Bending Properties
Canada
Experimental Tests
Numerical Models
Bending Stiffness
Load Resisting Capacity
Shear Analogy Theory

Language: English

Research Status: Complete

Series: Construction and Building Materials

Online Access: Free

Resource Link

https://www.researchgate.net/profile/Sun_Xiaofeng8/publication/326531884_Bending_and_compressive_properties_of_cross-laminated_timber_CLT_panels_made_from_Canadian_hemlock/links/5b60eccbaca272a2d678c9d7/Bending-and-compressive-properties-of-cross-laminated-timber-CLT-panels-made-from-Canadian-hemlock.pdf



Buildings Made of Dowel-Laminated Timber: Joint and Shear Wall Properties

<https://research.thinkwood.com/en/permalink/catalogue1718>


Author: Sandhaas, Carmen
Year of Publication: 2016
Country of Publication: Austria
Format: Conference Paper
Material: DLT (Dowel Laminated Timber)
Application: Shear Walls
Topic: Mechanical Properties
Seismic
Connections
Keywords: Joints
Load Carrying Capacity
Cyclic Tests
Energy Dissipation
Behaviour Factors
Numerical Models
Language: English
Conference: World Conference on Timber Engineering
Research Status: Complete
Notes: August 22-25, 2016, Vienna, Austria
p. 4589-4596

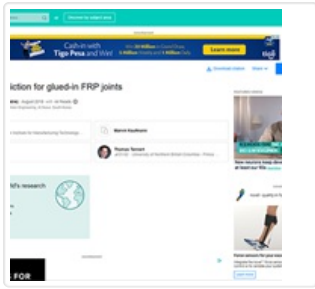
Summary:

Dowel-laminated timber (DLT) elements consist of lamellae arranged side-by-side that are connected with beech dowels. Due to the glue-free DLT element layup, joints and shear walls potentially suffer from considerable reduction of stiffness and load carrying capacity as metal fasteners inserted perpendicular to the element plane may be...

Online Access: Free

Resource Link

<http://hdl.handle.net/20.500.12708/172> 



Capacity Prediction for Glued-In FRP Joints

<https://research.thinkwood.com/en/permalink/catalogue2022>

Author: Vallée, Till
Kaufmann, Marvin
Alter, Benjamin
Tannert, Thomas

Year of Publication: 2018

Country of Publication: South Korea

Format: Conference Paper

Material: Glulam (Glue-Laminated Timber)

Topic: Connections

Keywords: Glued-In Rods
GFRP
Numerical Models
Capacity

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Online Access: Free

Resource Link

https://www.researchgate.net/publication/328064595_Capacity_prediction_for_glued-in_FRP_joints



CLT Buildings Laterally Braced with Core and Perimeter Walls

<https://research.thinkwood.com/en/permalink/catalogue1663>

Author: Polastri, Andrea
Loss, Cristiano
Pozza, Luca
Smith, Ian

Year of Publication: 2016

Country of Publication: Austria

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Application: Shear Walls

Topic: Connections
Seismic

Keywords: Multi-Storey
Numerical Models
X-RAD

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 22-25, 2016, Vienna, Austria
p. 3706-3715

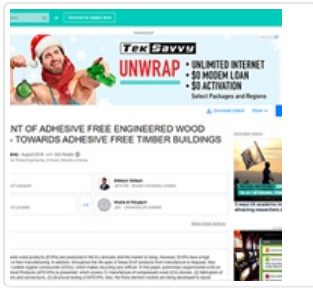
Summary:

In this work the behaviour of hybrid multi-storey buildings braced with Cross-Laminated-Timber (CLT) cores and shear-walls is studied based on numerical analyses. Two procedures for calibrating numerical models are adopted and compared to test data and application of provisions in current design codes. The paper presents calibration of parameters characterising connections used to interconnect adjacent CLT panels and building cores, and attach shear-walls to foundations or floors that act as elevated diaphragms. Different case studies are analysed comparing the structural responses of buildings assembled with „standard“ fastening systems (e.g. hold-downs and angle-brackets), or using a special X-RAD connection system. The aim is to characterize behaviours of connections in ways that reflect how they perform as parts of completed multi-storey superstructure systems, rather than when isolated from such systems or their substructures. Results from various analyses are presented in terms of principal elastic periods, base shear forces, and uplift forces in buildings. Discussion addresses key issues associated with engineering analysis and design of buildings having around five or more storeys.

Online Access: Free

Resource Link

<http://hdl.handle.net/20.500.12708/172>



Development of Adhesive Free Engineered Wood Products - Towards Adhesive Free Timber Buildings

<https://research.thinkwood.com/en/permalink/catalogue2029>

Author: Guan, Zhongwei
Sotayo, Adeayo
Oudjene, Marc
el Houjeyri, Imane
Harte, Annette
Mehra, Sameer
Haller, Peer
Namari, Siavash
Makradi, Ahmed
Belouettar, Salim
Deneufbourg, Francois

Year of Publication: 2018

Country of Publication: South Korea

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)
Glulam (Glue-Laminated Timber)

Topic: Connections
Design and Systems
Environmental Impact
Mechanical Properties

Keywords: Adhesives
Manufacturing
Compressed Wood
Four Point Bending Test
Numerical Models

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Online Access: Free

Resource Link

https://www.researchgate.net/publication/327221259_DEVELOPMENT_OF_ADHESIVE_FREE_ENGINEERED_WOOD_PRODUCTS_-_TOWARDS_ADHESIVE_FREE_TIMBER_BUILDINGS



Fire Resistance of Laminated Veneer Lumber (LVL) and Cross-Laminated Timber (XLAM) Elements

<https://research.thinkwood.com/en/permalink/catalogue97>

Author: Menis, Agnese
Organization: University of Cagliari
Year of Publication: 2012
Country of Publication: Italy
Format: Thesis
Material: CLT (Cross-Laminated Timber)
LVL (Laminated Veneer Lumber)
Topic: Fire
Keywords: Numerical models
Finite element (FE) model
Abaqus
Testing
Language: English
Research Status: Complete

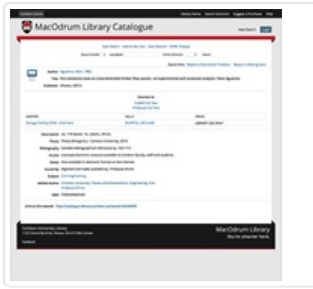
Summary:

This research investigates the fire behaviour of laminated veneer lumber elements and cross-laminated timber panels. The study focused on some research questions regarding the fire resistance of unprotected and protected timber structural elements, the possibility to predict accurately the fire behaviour of timber elements through numerical modelling, and the accuracy of analytical estimations of fire resistance using simplified design methods. Experimental tests of small and large specimens exposed to fire on one or more sides and subjected to different types and levels of load were performed. The results highlight the good performance of timber structural elements in fire conditions. The collected data were used to validate two- and three-dimensional models implemented in the general purpose finite element code Abaqus. Thermal and mechanical analyses were carried out to estimate the temperature distribution within unprotected and protected cross-sections of different sizes, the fire resistance and the displacement of timber elements loaded inplane and out-of-plane

Online Access: Free

Resource Link

<https://core.ac.uk/download/pdf/35315564.pdf>



Fire Resistance Tests on Cross-Laminated Timber Floor Panels: An Experimental and Numerical Analysis

<https://research.thinkwood.com/en/permalink/catalogue153>

Author: Aguanno, Marc
Organization: Carleton University
Year of Publication: 2013
Country of Publication: Canada
Publication:
Format: Thesis
Material: CLT (Cross-Laminated Timber)
Application: Floors
Topic: Fire
Keywords: Charring Rate
Temperature
Gypsum
Adhesive
Codes
Numerical Models
Language: English
Research Status: Complete
Online Access: Free

Resource Link

https://curve.carleton.ca/system/files/etd/3b3165b2-15a1-44fa-9b8c-52742502c6e4/etd_pdf/066fdb2d85a66bd6e6ddb30d034b22a1/aguanno-fire-resistance-tests-on-cross-laminated-timber.pdf



Glued Timber-Concrete Beams – Analytical and Numerical Models for Assessment of Composite Action

<https://research.thinkwood.com/en/permalink/catalogue154>

Author: Skec, Leo
Bjelanovic, Adriana
Jelenic, Gordan

Publisher: HRCAK

Year of Publication: 2013

Country of Publication: Croatia

Format: Journal Article

Material: Glulam (Glue-Laminated Timber)
Timber-Concrete Composite

Application: Beams

Topic: Design and Systems
Serviceability

Keywords: Finite Element Model
Load Carrying Capacity
Loading
Numerical models
Short-term

Language: English

Research Status: Complete

Series: Engineering Review

Summary:

An analysis of glued composite timber-concrete systems is presented. Experimental data obtained from laboratory tests under short-term loading are compared with the analytical calculation and the design procedure for fully composite beams given in the EN 1995-1-1 standard. Numerical linear 2D finite element modelling and an analytical solution assuming linear elastic behaviour of glue and the interlayer slip are also conducted and validated. The effect of composite action in the three mentioned approaches is assessed by comparison of midspan deflections. In this way, a parametric study of the glue-line properties and the interlayer slip stiffness on load-carrying capacity and serviceability of glued composite beams exposed to short-time loading is easily performed.

Online Access: Free

Resource Link

<https://hrcak.srce.hr/97686>



Structural Analysis of In-Plane Loaded CLT Beam with Holes: FE-Analyses and Parameter Studies

<https://research.thinkwood.com/en/permalink/catalogue2236>

Author: Jelec, Mario
Rajcic, Vlatka
Danielsson, Henrik
Serrano, Erik

Year of Publication: 2016

Country of Publication: Germany

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Application: Beams

Topic: Mechanical Properties

Keywords: Holes
In-Plane Loading
Shear Loading
Numerical Models
FE model

Language: English

Conference: INTER

Research Status: Complete

Online Access: Free

Resource Link

https://portal.research.lu.se/portal/files/11532993/INTER_49_12_02_Structural_analysis_of_in_plane_loaded_CLT_beams_with_holes.pdf



Structural Design and Modelling Method for the Post-Tensioned CLT Shear Wall Structures

<https://research.thinkwood.com/en/permalink/catalogue2149>

Author: He, Minjuan
Sun, Xiaofeng
Li, Zheng

Year of Publication: 2019

Country of Publication: Canada

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Application: Walls

Topic: Mechanical Properties

Keywords: Direct Displacement-Based Design
Post-Tensioned
Numerical Models
Shear Walls
Lateral Performance
Time-History Analysis
Inter-Storey Drift
Parametric Analysis

Language: English

Conference: Modular and Offsite Construction Summit

Research Status: Complete

Online Access: Free

Resource Link

<https://doi.org/10.29173/mocs80>