



Acoustics Summary: Sound Insulation in Mid-Rise Wood Building

<https://research.thinkwood.com/en/permalink/catalogue750>

Author: Stephan Schoenwald
Berndt Zeitler
Frances King
Ivan Sabourin

Organization: National Research Council of Canada

Year of Publication: 2014

Country of Publication: Canada

Publication:

Format: Report

Material: CLT (Cross-Laminated Timber)
Light Frame (Lumber+Panels)

Application: Wood Building Systems

Topic: Acoustics and Vibration
Design and Systems

Keywords: Mid-Rise
Sound Insulation
Impact Sound Transmission
Airborne Sound Transmission

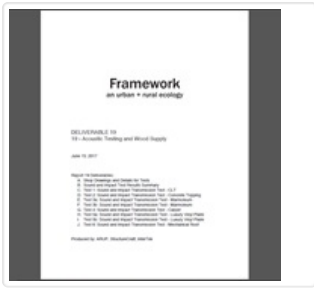
Language: English

Research Status: Complete

Online Access: Free

Resource Link

<http://doi.org/10.4224/21274554> ↗



Acoustic Testing and Wood Supply for Framework Office Building in Portland, OR

<https://research.thinkwood.com/en/permalink/catalogue1830>

Organization: ARUP
StructureCraft
InterTek

Year of Publication: 2017

Country of Publication: United States

Format: Report

Material: CLT (Cross-Laminated Timber)

Application: Floors
Ceilings
Walls
Roofs
Wood Building Systems

Topic: Acoustics and Vibration

Keywords: Sound Transmission
Impact Noise Transmission
Concrete Topping

Language: English

Research Status: Complete

Series: Framework: An Urban + Rural Design

Abstract:

- A. Shop Drawings and Details for Tests
- B. Sound and Impact Test Results Summary
- C. Test 1: Sound and Impact Transmission Test - CLT
- D. Test 2: Sound and Impact Transmission Test - Concrete Topping
- E. Test 3a: Sound and Impact Transmission Test - Marmoleum
- F. Test 3b: Sound and Impact Transmission Test - Marmoleum
- G. Test 4: Sound and Impact Transmission Test - Carpet
- H. Test 5a: Sound and Impact Transmission Test - Luxury Vinyl Plank
- I. Test 5b: Sound and Impact Transmission Test - Luxury Vinyl Plank
- J. Test 6: Sound and Impact Transmission Test - Mechanical Roof

Online Access: Free

Resource Link

<https://www.thinkwood.com/wp-content/uploads/2018/10/19-Framework-Acoustic-Testing-and-Wood-Supply.pdf>



Advanced Wood-Based Solutions for Mid-Rise and High-Rise Construction: In-Situ Testing of the Origine 13-Storey Building for Vibration and Acoustic Performances

<https://research.thinkwood.com/en/permalink/catalogue1474>

Author: Lin Hu
Samuel Cuerrier-Auclair

Organization: FPInnovations

Year of Publication: 2018

Country of Publication: Canada

Format: Report

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems
Floors
Walls

Topic: Acoustics and Vibration
Serviceability

Keywords: Origine
Natural Frequencies
Damping Ratios
Sound Insulation
Ambient Vibration Tests
Static Deflection
Apparent Sound Transmission Class
Apparent Impact Insulation Class

Language: English

Research Status: Complete

Notes: Report is currently not available due to the redevelopment of FPInnovations' publications website.

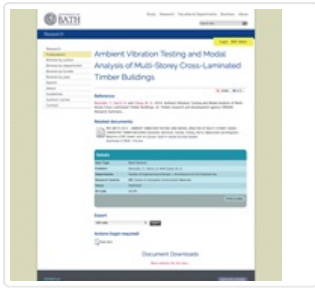
Abstract:

Serviceability performance studied covers three different performance attributes of a building. These attributes are 1) vibration of the whole building structure, 2) vibration of the floor system, typically in regards to motions in a localized area within the entire floor plate, and 3) sound insulation performance of the wall and floor assemblies...

Online Access: Payment Required

Resource Link

https://fpinnovations.ca/Extranet/Pages/AssetDetails.aspx?item=/Extranet/Assets/ResearchReportsWP/16795.pdf#_Wz0Cq_lKiUI



Ambient Vibration Testing and Modal Analysis of Multi-Storey Cross Laminated Timber Buildings

<https://research.thinkwood.com/en/permalink/catalogue237>

Author: Thomas Reynolds
Åsa Bolmsvik
Johan Vessby
Wen-Shao Chang
Richard Harris
Jonathan Bawcombe
Julie Bregulla

Year of Publication: 2014

Country of Publication: Canada

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Acoustics and Vibration
Wind
Serviceability

Keywords: Modal Properties
Multi-Storey
Damping

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 10-14, 2014, Quebec City, Canada

Abstract:

The ambient movement of three modern multi-storey timber buildings has been measured and used to determine modal properties. This information, obtained by a simple, unobtrusive series of tests, can give insights into the structural performance of these f...

Online Access: Free

Resource Link

<http://opus.bath.ac.uk/42195/>



Apparent Sound Insulation in Cross-Laminated Timber Buildings

<https://research.thinkwood.com/en/permalink/catalogue1276>

Author: Christoph Hoeller
Jeffrey Mahn
Dave Quirt
Stefan Schoenwald
Berndt Zeitler

Organization: National Research Council of Canada

Year of Publication: 2017

Country of Publication: Canada

Format: Report

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Acoustics and Vibration
Connections

Keywords: Airborne Sound Transmission
Adhesives

Language: English

Research Status: Complete

Online Access: Free

Resource Link

<http://doi.org/10.4224/23002009>



Assessment of Dynamic Characteristics of Multi-Storey Timber Buildings

<https://research.thinkwood.com/en/permalink/catalogue1786>

Author: Johannes Hummel
Werner Seim

Year of Publication: 2016

Country of Publication: Austria

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)
Light Frame (Lumber+Panels)

Application: Wood Building Systems

Topic: Acoustics and Vibration
Mechanical Properties
Seismic

Keywords: Natural Frequency
Multi-Storey
Force-Based Design
Stiffness
Deformation

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 22-25, 2016, Vienna, Austria
p. 5819-5828

Abstract:

This paper discusses the impact of the natural frequency of multi-storey timber structures, focusing on force-based seismic design. Simplified approaches to determine the frequency of light-frame and cross-laminated timber structures are investigated. How stiffness parameters for simple two-dimensional analysis models can be derived from the different contributions of deformation...

Online Access: Free

Resource Link

<http://repositum.tuwien.ac.at/obvutwoa/content/pageview/1650199>



The ASTC Ratings of Mid-Rise Wood Constructions Using CertainTeed SilentFX® QuickCut Gypsum Board [2nd Edition]

<https://research.thinkwood.com/en/permalink/catalogue1278>

Author: Jeffrey Mahn
Organization: National Research Council of Canada
Year of Publication: 2018
Country of Publication: Canada
Publication:
Format: Report
Material: CLT (Cross-Laminated Timber)
Application: Wood Building Systems
Topic: Acoustics and Vibration
Keywords: Apparent Sound Transmission Class
Mid-Rise
Gypsum
Fiberglass Insulation
Type X Gypsum Board
Language: English
Research Status: Complete
Online Access: Free

Resource Link

<http://doi.org/10.4224/23002826>



Building Higher with Light-Weight Timber Structures: The Effect of Wind Induced Vibrations

<https://research.thinkwood.com/en/permalink/catalogue89>

Author: Marie Johansson
Andreas Linderholt
Åsa Bolmsvik
Kirsi Jamerö
Jörgen Olsson
Thomas Reynolds

Organization: Inter-noise

Year of Publication: 2015

Country of Publication: United States

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)
Light Frame (Lumber+Panels)
Glulam (Glue-Laminated Timber)

Application: Wood Building Systems

Topic: Acoustics and Vibration
Wind

Keywords: Mid-Rise
High-Rise
Vibration Properties

Language: English

Conference: Inter-noise 2015

Research Status: Complete

Notes: August 9-12, 2015, San Francisco, California, USA

Online Access: Free

Resource Link

<https://reynoldstom.files.wordpress.com/2013/08/internoise.pdf>



Development of Southern Pine Cross-Laminated Timber for Building Code Acceptance

<https://research.thinkwood.com/en/permalink/catalogue474>

Author: Daniel Hindman
John Bouldin

Year of Publication: 2014

Country of Publication: Canada

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Application: General Application

Topic: Acoustics and Vibration
Fire
Mechanical Properties
Market and Adoption

Keywords: Southern Pine
Fire Performance
Acoustical Performance
International Building Code

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 10-14, 2014, Quebec City, Canada

Abstract:

The current interest and growth of cross laminated timber (CLT) products has spurred interest in the manufacture of CLTs in the United States. The purpose of this paper is to explore the development of CLT materials from southern pine lumber commonly available in the United States.

Online Access: Free

Resource Link

http://schr.ws/hosted_files/wcte2014/1e/ABS575_Hindman_web.pdf



Direct and Flanking Transmission in CLT Buildings: On Site Measurements, Laboratory Measurements and Standards

<https://research.thinkwood.com/en/permalink/catalogue2038>

Author: Alice Speranza
Francesca Di Nocco
Federica Morandi
Luca Barbaresi
Niko Kumer

Year of Publication: 2018

Country of Publication: South Korea

Format: Conference Paper

Material: CLT (Cross-Laminated Timber)

Application: Wood Building Systems

Topic: Acoustics and Vibration

Keywords: Vibration Reduction Index
Numerical Model
Junction

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Online Access: Free

Resource Link

<https://indico.conference4me.psnr.pl/event/171/session/370/contribution/253/material/paper/1.pdf>