



Assessment of accuracy of species-temperature correction tables for resistance-type moisture meters

<https://library.fpinnovations.ca/en/permalink/fpipub744>

Author: Mackay, J.F.Graham
 Date: May 1984
 Edition: 37057
 Material Type: Research report
 Physical Description: 10 p.
 Sector: Wood Products
 Field: Wood Manufacturing & Digitalization
 Research Area: Advanced Wood Manufacturing
 Subject: Moisture content
 Lumber drying
 Series Number: W-267
 Location: Vancouver, British Columbia
 Language: English
 Abstract: Moisture determination, Electrical

Documents



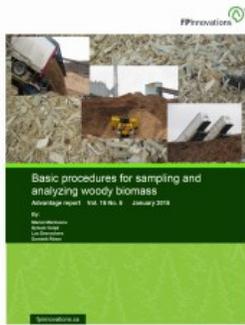
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Basic procedures for sampling and analyzing woody biomass

<https://library.fpinnovations.ca/en/permalink/fpipub3318>



Author: Marinescu, Marian
Volpé, Sylvain
Desrochers, Luc
Roser, Dominik

Date: January 2015

Edition: 39982

Material Type: Research report

Physical Description: 15 p.

Sector: Forest Operations

Field: Bioproducts

Research Area: Building Systems

Subject: Biomass
Bioenergy
Sampling
Physical properties
Moisture content
Particle size
Bulk density
Standards
Advantage

Series Number: Advantage ; Vol. 15, No. 5

Language: English

Abstract: Biomass sampling and analysis play decisive roles in determining the characteristics and value of the woody biomass fuel used in bioenergy systems in Canada. Sampling and analysis standards help harmonize the procedures that are used to monitor biomass quality. Because there are no Canada-wide biomass sampling standards, facilities that produce and use woody biomass have developed and implemented in-house sampling procedures of varying degrees of complexity. Given that the use of woody biomass in Canada is predicted to increase, the ability to ensure the quality of biomass will become increasingly important in order to control costs and maximize system efficiency.

BIOMASS
Biofuels
Bioenergy
MOISTURE CONTENT
BULK DENSITY
Bark content
Contamination
ASH
Lignin
CARBOHYDRATES
EXTRACTIVES

Abstract: L'échantillonnage et l'analyse de la biomasse jouent un rôle décisif dans la détermination des caractéristiques et de la valeur des combustibles de biomasse ligneuse utilisés dans les systèmes de bioénergie au Canada. Les normes d'échantillonnage et d'analyse contribuent à harmoniser les méthodes utilisées pour évaluer la qualité de la biomasse. Il n'existe pas de normes d'échantillonnage pancanadiennes; les usines qui produisent ou utilisent la biomasse ligneuse ont donc élaboré et appliqué des méthodes d'échantillonnage maison de niveau de complexité variable. Comme on prévoit une augmentation de l'utilisation de la biomasse ligneuse au Canada, les compétences permettant de garantir sa qualité deviendront de plus en plus importantes pour limiter les coûts et maximiser l'efficacité des systèmes.

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Caractéristiques cruciales de la biomasse pour les applications les plus courantes en bioénergie et biocarburants

<https://library.fpinnovations.ca/en/permalink/fpipub3102>

Author: Marinescu, Marian
Date: September 2013
Edition: 39759
Material Type: Research report
Physical Description: 12 p.
Sector: Forest Operations
Field: Bioproducts
Research Area: Building Systems

Subject: Biomass
Bioenergy
Moisture content
Physical properties
Advantage

Series Number: Avantage ; Vol. 14, No. 3

Language: French

ISSN: 14933381

Abstract: Le présent document décrit les caractéristiques cruciales de la biomasse comme le format et la taille, la teneur en humidité, la densité apparente, la teneur en feuillage/écorce, la contamination, la teneur en cendres, en lignine, en hydrates de carbone et en produits d'extraction ainsi que la valeur calorifique pour les applications les plus courantes de production de bioénergie et de biocarburants : combustions directe, gazéification, pyrolyse, torréfaction, fermentation et densification. Le document est destiné aux professionnels de la foresterie, de la transformation du bois, des pâtes et papiers et de la biomasse qui cherchent de l'information de base sur ces caractéristiques essentielles.

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Critical biomass attributes of the most common bioenergy and biofuel applications

<https://library.fpinnovations.ca/en/permalink/fpipub39735>

Author: Marinescu, Marian

Date: September 2013

Material Type: Research report

Physical Description: 12 p.

Sector: Forest Operations

Field: Bioproducts

Research Area: Building Systems

Subject: Biomass
Bioenergy
Moisture content
Physical properties
Advantage

Series Number: Advantage ; Vol. 14, No. 3

Language: English

ISSN: 14933381

Abstract: This primer presents critical attributes such as format and size; moisture content; bulk density; foliage/bark content; contamination; ash, lignin, carbohydrate, and extractive contents; and calorific value of the most common bioenergy and biofuel applications; direct combustion, gasification, pyrolysis, torrefaction, fermentation, and densification. The primer is aimed at forestry, wood processing, pulp and paper, and biomass professionals who are interested in basic information about these critical attributes.

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Decision aids for durable wood construction : review and redirection

<https://library.fpinnovations.ca/en/permalink/fpipub41201>

Author: O'Connor, J.
Morris, Paul I.

Contributor: Canada. Canadian Forest Service.

Date: March 1999

Material Type: Research report

Physical Description: 28 p.

Sector: Wood Products

Field: Sustainable Construction

Research Area: Advanced Wood Materials

Subject: Building construction
Planning
Design
Moisture content

Series Number: Canadian Forest Service No. 19
Project No. 1052
W-1611

Location: Vancouver, British Columbia

Language: English

Abstract:

The project Decision Aids for Durable Wood Construction underwent a major review with the hiring of a new project leader (O'Connor) in September 1998. In consultation with the project liaisons, the work on this project since its start-up in 1993 was examined, the primary task of developing a computer-based tool for the building industry was reconsidered, the context of worldwide research into building envelope moisture failures was reviewed, and a revised project plan was proposed.

Decision Aids was a self-contained project for its first three years, with efforts concentrated on knowledge acquisition, expert system experimentation and other foundation work for development of a computer tool. With a rise of interest in building envelope moisture failures across North America and elsewhere, Decision Aids activity shifted into a mode that was reactive to projects and events external to Forintek. This was necessary due to the level of effort external agencies, media and research labs were devoting to the topic. In particular, where the actions of outsiders began to have an influence on wood in construction, we found it critical to participate in order to ensure the fair and correct treatment of wood.

The new project leader was asked to review the project and either get the project back on its original track or suggest a redirection. The project goal, to assist end users in best application of wood, was determined to be sound. In addition, the project leader recommended that resources continue to be allocated to participation in outside research efforts and other related activities. However, it was recommended that the project objective to develop computer-based decision tools be reassessed. Instead, the project leader recommended a course of action focused on tasks both shorter in term and smaller in scope, which will enable Forintek to deliver results better tailored to the immediate needs of industry in a time of building envelope moisture failure "crisis."

The new project plan is split into two areas: 1) address building envelope moisture failures that are due to existing information not arriving in the right hands (i.e., a technology transfer problem); and 2) address building envelope moisture failures that are due to a lack of information (i.e., a research problem). The technology transfer area will create a formal plan for communication to the building industry, will enable Forintek to experiment with developing pathways to that new target audience, and will provide the means for the wood industry to provide helpful durability information to the public through a relatively neutral third party (Forintek). The research area will explore opportunities for limited scope experiments or collaborative field studies of wood system durability performance, with the intent of verifying or modifying codes, standards and best practice guides.

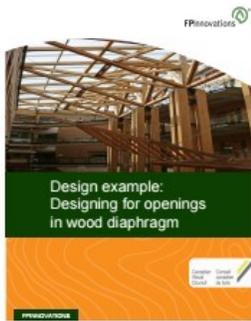
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Design example : designing for openings in wood diaphragm

<https://library.fpinnovations.ca/en/permalink/fpipub6030>

Author: Neylon, B.
Wang, Jasmine
Ni, Chun

Contributor: Canadian Wood Council

Date: October 2013

Edition: 42999

Material Type: Research report

Physical Description: 36 p.

Sector: Wood Products

Field: Sustainable Construction

Research Area: Building Systems

Subject: Building construction
Residential construction
Design
Moisture content

Series Number: W-3080

Language: English

Documents



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Design example : design of stacked multi-storey wood-based shear walls using a mechanics-based approach

<https://library.fpinnovations.ca/en/permalink/fpipub6034>

Author: Newfield, G.
Ni, Chun
Wang, Jasmine

Contributor: Canadian Wood Council

Date: October 2013

Edition: 43003

Material Type: Research report

Physical Description: 19 p.

Sector: Wood Products

Field: Sustainable Construction

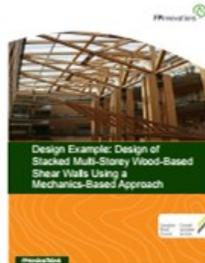
Research Area: Building Systems

Subject: Building construction
Residential construction
Design
Moisture content
Walls

Series Number: W-3084

Language: English

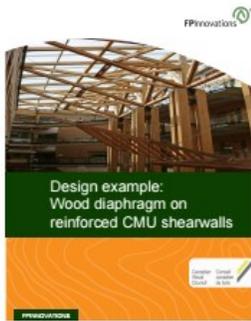
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Design example : wood diaphragm on reinforced CMU shearwalls

<https://library.fpinnovations.ca/en/permalink/fpipub6029>

Author: Neylon, B.
Wang, Jasmine
Ni, Chun

Contributor: Canadian Wood Council

Date: October 2013

Edition: 42998

Material Type: Research report

Physical Description: 20 p.

Sector: Wood Products

Field: Sustainable Construction

Research Area: Building Systems

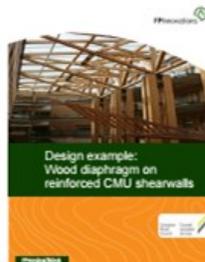
Subject: Building construction
Residential construction
Design
Moisture content
Walls

Series Number: W-3079

Language: English

Abstract: N/A

Documents



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Design example : wood diaphragm using envelope method

<https://library.fpinnovations.ca/en/permalink/fpipub6031>

Author: Neylon, B.
Wang, Jasmine
Ni, Chun

Contributor: Canadian Wood Council

Date: October 2013

Edition: 43000

Material Type: Research report

Physical Description: 14 p.

Sector: Wood Products

Field: Sustainable Construction

Research Area: Building Systems

Subject: Building construction
Residential construction
Design
Moisture content

Series Number: W-3081

Language: English

Abstract: N/A

Documents



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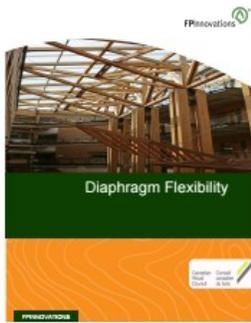
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Diaphragm flexibility

<https://library.fpinnovations.ca/en/permalink/fpipub6028>

Author: Neylon, B.
Wang, Jasmine
Ni, Chun



Contributor: Canadian Wood Council
Date: October 2013
Edition: 42997
Material Type: Research report
Physical Description: 7 p.
Sector: Wood Products
Field: Sustainable Construction
Research Area: Building Systems
Subject: Building construction
Residential construction
Design
Moisture content
Walls

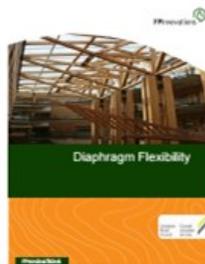
Series Number: W-3078

Language: English

Abstract: Diaphragms are essential to transfer lateral forces in the plane of the diaphragms to supporting shear walls underneath. As the distribution of lateral force to shear walls is dependent on the relative stiffness/flexibility of diaphragm to the shear walls, it is critical to know the stiffness of both diaphragm and shear walls, so that appropriate lateral force applied on shear walls can be assigned.

In design, diaphragms can be treated as flexible, rigid or semi-rigid. For a diaphragm that is designated as flexible, the in-plane forces can be assumed to be distributed to the shear walls according to the tributary areas associated with each shear wall. For a diaphragm that is designated as rigid, the loads are assumed to be distributed according to the relative stiffness of the shear walls, with consideration of additional shear force due to torsion for seismic design. In reality, diaphragm is neither purely flexible nor completely rigid, and is more realistically to be treated as semi-rigid. In this case, computer analysis using either plate or diagonal strut elements can be used and the load-deflection properties of the diaphragm will result in force distribution somewhere between the flexible and rigid models. However, alternatively envelope approach which takes the highest forces from rigid and flexible assumptions can be used as a conservative estimation in lieu of computer analysis.

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