



<https://library.fpinnovations.ca/en/permalink/fpipub37600>

Author: Orbay, L.  
Date: January 2002  
Material Type: Research report  
Physical Description: 47 p.  
Sector: Wood Products  
Field: Wood Manufacturing & Digitalization  
Research Area: Digitalization  
Subject: Scanning electron microscopy  
Scanners  
Series Number: 1983  
W-1826  
Location: Vancouver, British Columbia  
Language: English

Abstract:

Thirty full-length sample trees from the B.C. Interior were selected for a study to determine whether external log characteristics can predict internal log quality. The sample trees were also used to create 3-dimensional log images for sawmill simulation purposes. "LogSaw", a simulation tool with internal log defect detection capabilities, was used to explore the extent to which internal and external log quality information can improve log breakdown optimization. A model of a hypothetical sawmill producing lumber for the standard North American dimension market was created to study how lumber value recovery depends on different sawing optimization scenarios.

Three sawing optimization scenarios using different levels of knowledge of internal log defects were compared to currently used sawing optimization technique:

Ideal sawing optimization - all defects within log interior are known.

Sawing optimization using only the knowledge of surface knots.

Sawing optimization using log rotation instructions based on zones of least external knot density.

Simulation results have shown that it is worthwhile to "look into the log". When compared with the current optimization technique, the sawing optimization, including the full knowledge of log interior, has increased the value recovery by 6.2%. When only the surface knots were projected into the log interior and included in the optimization, the value recovery had increased by 4.3%. Even this 4.3% increase is still a big improvement because this sawing optimization could be implemented using currently available scanning technologies and optimization software enhanced to include log surface knots. The scenario of using log rotation instructions based on predicted zones of least internal knot density did not show value recovery improvement.

Including surface knots in the log breakdown optimization has considerably increased sawmill revenue; the hypothetical sawmill considered in this study, processing 400,000 m3 of log per year, has increased its revenue by \$2.2 million.

Scanners, Electronic

Defects - Detection


Documents

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# 1 : l'écorçage des billes

<https://library.fpinnovations.ca/en/permalink/fpipub38641>

Author: Pleau, J.H.  
Date: January 1993  
Material Type: Research report  
Physical Description: 51 p.  
Sector: Wood Products  
Field: Wood Manufacturing & Digitalization  
Research Area: Advanced Wood Manufacturing  
Subject: Maintenance  
Series Number: E-1843  
Location: Ottawa, Ontario  
Language: French  
Abstract: Debarkers - Maintenance

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## 2 : le déchetage : la qualité des copeaux : à la déchiqueteuse à disque

<https://library.fpinnovations.ca/en/permalink/fpipub2106>


Author: Pleau, J.H.  
Date: January 1993  
Edition: 38642  
Material Type: Research report  
Physical Description: 14 p.  
Sector: Wood Products  
Field: Wood Manufacturing & Digitalization  
Research Area: Advanced Wood Manufacturing  
Subject: Planers  
Series Number: E-1844  
Location: Ottawa, Ontario  
Language: French  
Abstract: Planers - Maintenance  
Knives  
Cutters

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## 3 : le déchiquetage : la qualité des copeaux : à la déchiqueteuse-équarisseuse (Canter)

<https://library.fpinnovations.ca/en/permalink/fpipub2107>

Author: Pleau, J.H.  
Date: January 1993  
Edition: 38643  
Material Type: Research report  
Physical Description: 11 p.  
Sector: Wood Products  
Field: Wood Manufacturing & Digitalization  
Research Area: Advanced Wood Manufacturing  
Subject: Chippers  
Series Number: E-1845  
Location: Ottawa, Ontario  
Language: French  
Abstract: Chipper Canters - Maintenance

### Documents

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## 4 : le tamisage des copeaux

<https://library.fpinnovations.ca/en/permalink/fpipub2108>

Author: Pleau, J.H.  
Date: January 1993  
Edition: 38644  
Material Type: Research report  
Physical Description: 8 p.  
Sector: Wood Products  
Field: Wood Manufacturing & Digitalization  
Research Area: Advanced Wood Manufacturing  
Subject: Chips  
Sorting  
Series Number: E-1846  
Location: Ottawa, Ontario  
Language: French

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## 5 ply, preservative treated plywood sample

<https://library.fpinnovations.ca/en/permalink/fpipub1563>

**Author:** Morgan, E.K.  
**Contributor:** Canada Mortgage and Housing Corporation (CMHC)  
**Date:** October 1985  
**Edition:** 38069  
**Material Type:** Research report  
**Physical Description:** 3 p.  
**Sector:** Wood Products  
**Field:** Wood Manufacturing & Digitalization  
**Research Area:** Advanced Wood Manufacturing  
**Subject:** Testing  
Preservation  
Plywood  
**Series Number:** 3-45-68-569  
E-197  
**Location:** Ottawa, Ontario  
**Language:** English  
**Abstract:** Plywood - Preservation - Testing  
Plywood - Testing

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## 20-year evaluation of millwork preservatives

<https://library.fpinnovations.ca/en/permalink/fpipub4412>

Author: Ingram, Janet K.  
Morris, Paul I.

Date: January 1999

Edition: 41191

Material Type: Research report

Physical Description: 5 p.

Sector: Wood Products

Field: Sustainable Construction

Research Area: Advanced Wood Materials

Subject: Preservatives tests  
Preservatives  
Preservation

Series Number: W-1548

Location: Vancouver, British Columbia

Language: English

Abstract: A field test of six millwork preservatives has been ongoing for twenty years, using a simulated window corner, or "Y-joint", as the test unit. Three preservatives provided excellent protection to white pine and white spruce: 5% pentachlorophenol in varsol, phenyl mercury oleate in varsol, and 0.75% oxine copper in varsol.

Preservatives - Tests  
Preservation - Durability

### Documents



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## 24 month evaluation of novel UV protection systems. Second Year Report 2004/05

<https://library.fpinnovations.ca/en/permalink/fpipub4530>





Author: Morris, Paul I.  
McFarling, S.M.

Contributor: Canada. Canadian Forest Service.

Date: March 2005

Edition: 41317

Material Type: Research report

Physical Description: 19 p.

Sector: Wood Products

Field: Sustainable Construction

Research Area: Advanced Wood Materials

Subject: Preservatives tests  
Preservatives

Series Number: Canadian Forest Service No. 35;3226  
W-2134

Location: Vancouver, British Columbia

Language: English

Abstract: A transparent coating with long-term performance could help wood maintain its share of residential markets against material substitution and potentially expand markets in recreational property and non-residential buildings. While transparent coatings can be made reasonably resistant to UV some UV likely penetrates to the wood and by necessity clear coatings are transparent to visible light. Visible light can also cause damage over the long term thus the underlying wood needs additional protection. Four novel UV protection systems were tested as pre-treatments on uncoated wood and under three coatings, a water-based film forming coating, a water-based acrylic varnish and a solvent based water repellent. Samples were exposed to natural weathering facing South at 45° at a test site in Gulfport, Mississippi, in collaboration with the USDA Forest Products Laboratory. The test material was inspected every six months for discolouration, mold and stain, coating water repellency, flaking, erosion and cracking and substrate condition. After 24 months exposure, coatings over the combination of UV absorber and lignin stabilizer identified by Stephen Ayer were performing better than the same coatings applied over the combination recommended by Ciba and coatings over both pre-treatments were performing substantially better than controls with no pre-treatment. Projection of fitted curves beyond the data appears to indicate that pretreatment may double the life expectancy of the coating. There was no consistent effect of the synergists on either combination at this time.

Preservatives - Tests  
Finishes - Exterior - Tests

## Documents

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Journal of Energy Engineering  
Volume 136, Number 1  
February 2014

Journal of Energy Engineering  
Volume 136, Number 1  
February 2014

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**Author:** Morris, Paul I.  
O'Connor, J.  
Jones, E.  
Boudreau, M.

**Date:** August 1999

**Edition:** 41223

**Material Type:** Research report

**Physical Description:** 24 p.

**Sector:** Wood Products

**Field:** Sustainable Construction

**Research Area:** Advanced Wood Materials

**Subject:** Research

**Series Number:** W-1685

**Location:** Vancouver, British Columbia

**Language:** English

**Abstract:** The objective of this initiative is to re-evaluate Forintek's research strategy and the Canadian Wood Council's technology transfer strategy in durability of wood products and systems in the light of changing industrial, regulatory, environmental, and social factors. Forintek and the CWC chose to undertake this process jointly, in order to develop well-matched parallel activities that are mutually supportive and grounded in common underlying objectives. In this way, both organizations can most effectively and efficiently address our members' needs in an area of growing challenges for the wood industry.

The first step in the strategic planning process was the creation of a joint CWC/Forintek Durability Guidance Group. This group was canvassed for input on high priority issues related to wood durability. Forintek and CWC then developed ideas for deliverables or tasks in research and technology transfer, respectively. At this stage we are looking for input on the degree to which this draft strategy addresses industry needs.

Research - Durability

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