



From the Knot Morphology of Individual Timber Boards to the Mechanical Properties of Glued Laminated Timber

<https://research.thinkwood.com/en/permalink/catalogue1610>

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Year of Publication: 2016

Country of Publication: Austria

Format: Conference Paper

Material: Glulam (Glue-Laminated Timber)

Topic: Mechanical Properties

Keywords: Knots
Simulation

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 22-25, 2016, Vienna, Austria
p. 2195-2204

Summary:

Knots and the resulting fibre deviations around them have significant impact on the mechanical properties of timber boards. Subsequently, the effective mechanical properties of timber products, such as glued laminated timber (GLT), are strongly influenced by those timber board properties. This motivated the development of an algorithm for reconstructing the knot morphology within individual timber boards, which is presented and discussed in this work. Furthermore, the link to the effective mechanical behaviour of GLT by using stochastic simulation techniques is explored, allowing the estimation of effective mechanical properties of GLT based on the morphology of individual timber boards.

Online Access: Free

Resource Link

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