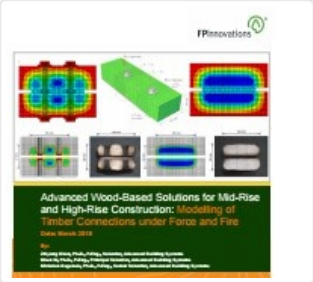

Advanced Wood-Based Solutions for Mid-Rise and High-Rise Construction: Modelling of Timber Connections Under Force and Fire

https://research.thinkwood.com/en/permalink/catalogue1473

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Material:	LVL (Laminated Veneer Lumber)
	Glulam (Glue-Laminated Timber)
Application:	Beams
Topic:	Connections
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Summary:

FPInnovations carried out a survey with consultants and researchers on the use of analytical models and software packages related to the analysis and design of mass timber buildings. The responses confirmed that a lack of suitable models and related information for material properties of timber connections was creating an impediment to the design and construction of this type of buildings. Furthermore, there is currently a lack of computer models and expertise for carrying out performance-based design for wood buildings, in particular seismic and/or fire performance design.

In this study, a sophisticated constitutive model for wood-based composite material under stress and temperature was developed. This constitutive model was programmed into a user-subroutine which can be added to most general-purpose finite element software. The developed model was validated with test results of a laminated veneer lumber (LVL) beam and glulam bolted connection under force and/or fire.

Online Access:	Free

Resource Link

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