



Cross-Laminated Timber Engineering: Improvement and Application

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Summary:

The development of cross-laminated timber (CLT) panel technology has opened up new opportunities for wood in tall buildings. Several characteristics including seismic performance and speed of construction have raised interest among designers. As CLT gains acceptance in the industry, alternative structural solutions need to be investigated to improve performance of CLT as a building material. The first study presented is an assessment of the viability of hybrid poplar for use in CLT panels. Hybrid poplar is a low density species, which is not typically considered for structural applications. Low density species have the potential to improve the structural efficiency of CLT panels. The tests conducted are based on the qualification of panels outlined in the ANSI/APA PRG-320: Standard for Performance-Rated Cross-Laminated Timber to determine the structural viability of the CLT panels. The second study presented is an investigation of a new alternative energy dissipation solution to be used with cross-laminated timber rocking walls for seismic design. The energy dissipators are designed as a structural fuse which can be easily replaced after failure following a large seismic event. The results of this study give insight to alternative solutions for CLT to improve upon current applications.

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