

CAPACITY RESISTANCE AND PERFORMANCE OF SINGLE-SHEAR  
BOLTED AND NAILED CONNECTIONS:  
AN EXPERIMENTAL INVESTIGATION

by

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(ABSTRACT)

The experimental study reported upon in this thesis focused on the development of physical data characterizing the behavior of single-shear, laterally-loaded connections when loaded up to and beyond capacity (i.e., maximum resistance). Specimens included a wide array of connection configurations common in wood construction. All connections were tested monotonically in tension under displacement-controlled loading, parallel to the grain. Results of these tests are presented and discussed. Test variables of nailed connections included nail diameter, side member material type, and side member thickness. Test variables of bolted connections included bolt diameter, commercial species grouping of the main and side members, and main member thickness.

Conclusions drawn from this research include mechanics-based explanations of numerous connection response trends observed with respect to test variables. Additionally, observed factors of safety and over-strengths of current design values are quantified on a capacity-basis.

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