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Finite Element Modelling of Log Wall Corner Joints

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Abstract : The paper presents outcomes of the numerical research performed on standard and dovetail corner joints under lateral loads. An overview of the past research on log shear walls is also presented. To the authors' best knowledge, currently, there are no specific design guidelines available in the code for the design of log shear walls, implying the need to investigate the performance of log shear walls. This research explores the performance of the log shear wall corner joint system of standard joint and dovetail types using numerical methods based on research available in the literature. A parametric study is performed to study the effect of gap size provided between two orthogonal logs and the presence of wood and steel dowels provided as joinery between log courses on the performance of such a structural system. The research outcomes are the force-displacement curves. 8% variability is seen in the reaction forces with the change of gap size for the case of the standard joint, while a variation of 10% is observed in the reaction forces for the dovetail joint system.

Keywords : dovetail joint, finite element modelling, log shear walls, standard joint
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