**REVIEW ON EARTHQUAKE RESISTANT WOODEN HOUSE**

**ABSTRACT**

Wood-stud shear walls are commonly used to provide lateral stability against horizontal forces in wood houses. Therefore, accurate predictions of the deformation properties of shear walls are necessary in order to improve the design of wood frame houses against earthquake loading. The aim of this thesis is to increase damping capacity of wood-stud shear walls and hence improve wood frame houses’ resistance against earthquakes. The starting point has been the laboratory experiments of nail joint’s deformation properties. Purpose of the experiments was to determine material properties of a nail joint. The material properties have later been used as material input data in the finite element (FE) model of woodstud shear wall elements under alternating lateral loading. FE results have shown that wood-stud shear wall element’s damping capacity is mainly dependent on nail joints properties, number of nail joints, wall dimension and the use of middle studs.

**Key Words:** Shear walls, Earthquake loading, Damping capacity, Material data, FE model, Nail joint