



Effect of Opening on Seismic Performance of CLT Panel: Part. 1 Shear Test of H-Shape Specimen Panel

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Summary:

A concrete-filled steel tube (CFT) column system has many advantages compared with ordinary steel or reinforced concrete system. One of the main advantages is the interaction between steel tube and concrete: occurrence of the local buckling of steel tube is delayed by the restraint of concrete, and the strength of concrete is increased by the confining effect provided from the steel tube. Extensive research work has been done in Japan over the last 15 years, including "New Urban Housing Project" and "US-Japan Cooperative Earthquake Research Program", in addition to the work done by individual universities and industries, which has been presented at the annual meeting of Architectural Institute of Japan (AIJ). This paper introduces the merits, design provisions and recent construction trends of CFT column systems in Japan, and discusses the results of trial designs of CFT theme structures which have been carried out to look for the advantages in the performance and construction cost compared with other constructional system.

Online Access: Free

Resource Link

https://www.researchgate.net/profile/Shosuke_Morino/publication/37668409_Concrete-filled_steel_tube_column_system-its_advantages/links/54db0e460cf261ce15cefc49/Concrete-filled-steel-tube-column-system-its-advantages.pdf



Effect of Opening on Seismic Performance of CLT Panel: Part. 2 Bending Shear Test of L-Shape Specimen Panel

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Summary:

The paper presents some experimental data and phenomenon on bracket anchor connections for Cross-Laminated-Timber. The goal of this research is to provide a better understanding of the seismic performance of bracket connections subjected to seismic actions and how to choose and design bracket connections for Cross-Laminated-Timber structures. Test configuration and experimental setups are illustrated in details; cyclic displacement schedules of the connections in two directions are presented considering that CLT wall has horizontal sliding in the plane and uplift at the end in quasi-state tests. Different failure modes and force transmission mechanisms of different connections under the loading protocol were analysed. And important quantities for seismic design such as strength, and stiffness, equivalent yield load, peak load and ductility of the connections are evaluated and compared among different kinds of connections; an excellent connector is revealed in ductility and load capacity by test data analysis. In addition, some suggestions to choose and design bracket anchor connections are given.

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https://www.matec-conferences.org/articles/mateconf/pdf/2019/24/mateconf_acem2019_01011.pdf