

## Behavior Study of Concrete-Filled Thin-Walled Square Hollow Steel Stub Columns

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**Abstract :** Test results on concrete-filled steel tubular stub columns under axial compression are presented. The study was mainly focused on square hollow section SHS columns; 27 columns were tested. The main experimental parameters considered were the thickness of the tube, columns length and cross section sizes. Existing design codes and theoretical model were used to predict load-carrying capacities of composite section to compare the accuracy of the predictions by using the recommendations of DTR-BC (Algerian code), CSA (Canadian standard), AIJ, EC4, DBJ, AISC, BS and EC4. Experimental results indicate that the studied parameters have significant influence on both the compressive load capacity and the column failure mode. All codes used in the comparison, provide higher resistance compared to those of tests. Equation method has been suggested to evaluate the axial capacity of the composite section seem to be in agreement with tests.

**Keywords :** axial loading, composite section, concrete-filled steel tubes, square hollow section

**Conference Title :** ICCSGE 2015 : International Conference on Concrete, Structural and Geotechnical Engineering

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** January 26-27, 2015