

Experiment and Analytical Study on Fire Resistance Performance of Slot Type Concrete-Filled Tube

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Abstract : In this study, a full-scale test and analysis (numerical analysis) of fire resistance performance of bare CFT column on which slot was used instead of existing welding method to connect the steel pipe on the concrete-filled tube were conducted. Welded CFT column is known to be vulnerable to high or low temperature because of low brittleness of welding part. As a result of a fire resistance performance test of slot CFT column after removing the welding part and fixing it by a slot which was folded into the tube, slot type CFT column indicated the improved fire resistance performance than welded CFT column by 28% or more. And as a result of conducting finite element analysis of slot type column using ABAQUS, analysis result proved the reliability of the test result in predicting the fire behavior and fire resistance hour.

Keywords : CFT (concrete-filled tube) column, fire resistance performance, slot, weld

Conference Title : ICABTDR 2018 : International Conference on Advanced Building Technologies and Disaster Reduction

Conference Location : Stockholm, Sweden

Conference Dates : July 12-13, 2018