

Simplified Analysis on Steel Frame Infill with FRP Composite Panel

Authors : HyunSu Seo, HoYoung Son, Sungjin Kim, WooYoung Jung

Abstract : In order to understand the seismic behavior of steel frame structure with infill FRP composite panel, simple models for simulation on the steel frame with the panel systems were developed in this study. To achieve the simple design method of the steel framed structure with the damping panel system, 2-D finite element analysis with the springs and dashpots models was conducted in ABAQUS. Under various applied spring stiffness and dashpot coefficient, the expected hysteretic energy responses of the steel frame with damping panel systems were investigated. Using the proposed simple design method which decides the stiffness and the damping, it is possible to decide the FRP and damping materials on a steel frame system.

Keywords : numerical analysis, FEM, infill, GFRP, damping

Conference Title : ICCEAE 2016 : International Conference on Civil, Environmental and Architectural Engineering

Conference Location : Madrid, Spain

Conference Dates : March 24-25, 2016