

Seismic Analysis of Adjacent Buildings Connected with Dampers

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Abstract : This work deals with two buildings adjacent to each other connected with dampers. The "Imperial Valley Earthquake - El Centro", "May 18, 1940 earthquake time history is used for dynamic analysis of the system in the time domain. The effectiveness of fluid joint dampers is then investigated in terms of the reduction of displacement, acceleration and base shear responses of adjacent buildings. Finally, an extensive parametric study is carried out to find optimum damper properties like stiffness (Kd) and damping coefficient (Cd) for adjacent buildings. Results show that using fluid dampers to connect the adjacent buildings of different fundamental frequencies can effectively reduce earthquake-induced responses of either building if damper optimum properties are selected.

Keywords : energy dissipation devices, time history analysis, viscous damper, optimum parameters

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