عنوان مقاله:
Performance Evaluation of Viscoelastic and Friction Passive Damping System in Steel Structures

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خلاصه مقاله:

Additional dampers are employed in order to decrease the dynamic response of structure against the earthquake and wind loading recently. In this study, two types of systems related to waste of inactive energy, i.e. frictional damper which is categorized in dampers dependent on movement and viscoelastic damper which is categorized in dampers dependent on velocity, in making steel structures resistant are investigated and evaluated. Results of structures with dampers (viscoelastic damper, friction damper and combination of both dampers) were compared with the results of structures without damper. Increasing trend in dissipating energy was observed. Then, the behavior of these dampers in frames of ۴, ۸ and ۱۲ stories was studied by modeling the damper directly. The analyses were conducted via nonlinear time history technique and by using earthquake records (near fault and far fault) scaled with peak acceleration and SAP ۲۰۰۰ ۱۴۲۴۲ structure. Given that in frictional dampers the maximum force created in the damper is specified, the use of this damper in resistance building of structures is very effective especially by considering the limitation of structure capacity.

کلمات کلیدی:
- Passive damping, Seismic excitation, Viscoelastic damper, Friction damper, Non linear Dynamic Analysis

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