

Abstract

The fast expanding field of Earthquake Resistant Design of Structures presents significant improvements in both hardware and design procedures. Research and development of Passive Energy Dissipation devices for structural applications have roughly a 25- year history.

The object of the present dissertation which was elaborated as a part of the post – graduate program entitled “Earthquake Resistant Design of Structures”, is the Alternative Reinforcement of a multistory building with Passive Energy Dissipation Systems through friction dampers. At first, the study of the multistory building is taking place according to the Greek Anti – seismic Code of 2000. Afterwards, the building is reinforced with shear walls. The design of structural members is executed for the various types of reinforcement.

The design of the Passive Energy Dissipation Systems is based on the work done by the whole number of devices in one complete cycle. The technology is now at the stage where fabrication of actual systems is not standard. The system is examined with dynamic nonlinear analysis using one time history of accelerations, converted in a way that accomplishes the Code’s restrictions over time history analysis.

Finally, the comparison between the various methods is focused on the design procedure because of the insufficient information on the field of construction.