NEW FRICTION DAMPER FOR SEISMIC VIBRATION CONTROL

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ABSTRACT

In the last two decades great efforts were carried out to reduce the seismic demand through the concept of energy dissipation rather than increasing the resistant capacity of structures under seismic excitation. Several devices based on different energy dissipation principles have been developed and implemented worldwide. In this work, a novel multiple friction damper is proposed and examined in detail. To verify its characteristics and performance the friction damper was implemented on a single story steel frame prototype and tested for different values of normal force and under different realistic time acceleration records. Experimental results demonstrated its efficiency to control the structural response of both, new and retrofitted building type structures. A design methodology based on the Wen's numerical model is also presented.