Patent Search

Invention Title	“AN ACTIVE BASE ISOLATION CONTROL SYSTEM OF BUILDING FRAME USING SHAPE MEMORY ALLOY”
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Abstract:

"AN ACTIVE BASE ISOLATION CONTROL SYSTEM OF BUILDING FRAME USING SHAPE MEMORY ALLOY" The present invention relates to an active base isolation control sy building frame using shape memory alloy. The present invention presents the seismic response behavior for a building frame equipped with base isolation of laminate bearing attached to SMA wire dampers. The SMA wire damper utilizes super-elastic Nitinol wire for energy dissipation, which has very high fatigue life and large recove strain. The test results of Nitinol wires preferably with a diameter, but not limited to, of 0.6 mm can withstand over 2000 load cycles under 8% strain cycles. Further, the performance of SMA wire dampers in the frame of base isolation control problems is primary goal of present work. Accompanied drawing [FIG. 1]

Complete Specification

FIELD OF INVENTION:
The present invention relates to a kind of earthquake isolation bearing, particularly a kind of wire / cable type earthquake isolation bearing, belongs to building struct civil or mechanical engineering technical field, and in particular to an active base isolation control system of building frame using shape memory alloy.
BACKGROUND OF THE INVENTION
In the past several years a great advancement has been made in the field of base isolation technique of structural control. A base isolation system comprises of flexib mounting and energy dissipation device. In past years a number of structural failures have been observed in near field sites. Some researchers has raised concerns a efficacy of seismic isolation during such events. Based on observations from the Northridge earthquake, these researchers suggested that base isolated buildings are vulnerable to near field ground motions. Moreover, the Uniform Building Code have made the requirements for base isolation systems more stringent compared to t previous versions potentially rendering the additional complexity and cost of base isolated structures less economically justified. The code mandated accommodatior base displacements and the requirement to consider a stronger Maximum Capable Earthquake has suggested the need for supplemental damping device.
One example is the San Bernardino Country Medical Centre projectl. The isolation system is comprised of 392 high damping rubber isolators and 184 viscous dampe have been numerous prior-art also available in the public domain and few of them have been mentioned:

According to the CN103867625B patent, the invention discloses a rope type self-reset shape memory alloy seismic isolation and seismic reduction support, and belon technical fields of an architectural structure and mechanical engineering. A transverse anti-seismic cylinder tube (1), a transverse anti-seismic sliding passage (2), a co

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