



SPECIAL THEME SESSION ON STRUCTURAL RESPONSE CONTROL

DEVELOPMENTS IN STRUCTURAL CONTROL IN THE USA (PASSIVE)

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ABSTRACT

Passive structural control is rapidly moving from research and development into product development and application for seismic applications in the USA. Base isolation systems are the most fully developed with current construction including about 30 buildings and 80 bridges. Various base isolation technologies are being utilized as will be illustrated in this presentation. Adoption of building code design and quality control procedures will speed the use of this passive control system. Energy dissipation systems using metallic yield devices, friction devices, viscoelastic devices, and viscous fluid devices have been developed and used in buildings and bridges [Golden Gate Bridge] in the USA as illustrated in this presentation. Shape memory alloys are still in the research and development stage. Also, tuned mass dampers and tuned liquid dampers are still in the research and development stage.

The presentation will provide a summary of the current research and development status of these devices in the USA and illustrate their implementation in construction projects throughout California.

KEY WORDS

bridges, buildings, control, dissipation, energy, friction, isolation, passive, viscoelastic, viscous