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ERADIQUAKE PERFORMANCE AND TESTING

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The EradiQuake System (EQS) is a state of the art Isolation Bearing System designed to minimize forces and displacements experienced by structures during an earthquake. The basic components of the EQS consist of a sliding multirotational bearing assembly with friction damping, and a restoring force and maintenance free device called the mass energy regulator (MER).

This innovative system was developed based on extensive research conducted at the Multidisciplinary Center for Earthquake Engineering Research (MCEER) at the State University of New York at Buffalo. Shake table testing confirmed that the EQS is an extremely effective system for significantly reducing forces and displacements caused by strong ground accelerations.

**EASE OF RETROFIT**

Because of the compactness of the EQS bearing, existing structures can be retrofitted with these devices to improve their overall seismic performance.

**SIMPLE INSTALLATION**

The total EradiQuake System can be confined within the sole and masonry plates. This means that during installation of the bearings, no additional component connections are required.

**SIMPLIFIES DESIGN**

Because the EQS employs the use of multirotational and multidirectional bearings, protection from earthquakes is provided regardless of the direction or orientation of seismic forces.

**VERSATILE**

The EQS can be adjusted to the desired level of stiffness and damping. This means that the system can be fine-tuned for its ideal response to any design excitation.

**MULTIDIRECTIONAL PROTECTION**

Because the EQS employs the use of multirotational and multidirectional bearings, protection from earthquakes is provided regardless of the direction or orientation of seismic forces.

**COST EFFECTIVE**

The simplicity of the EQS and the use of readily available engineering materials results in a low cost isolation system. In addition, the use of the EQS in a structure’s design can actually reduce the overall cost by reducing forces and displacements.

**FIELD PROVEN**

The EQS has been used on over 200 structures around the world.

**DURABLE**

Performance is unaffected by long term cycling. EQS does not need to be replaced after seismic events.

**MAINTENANCE FREE**

The EQS is designed to restore the structure to its original pre-quake position. No costly jacking of the structure or replacement of fuses is required.

**COMPACT IN SIZE - LOW PROFILE**

Since the bearing plates, sliding surfaces and MER’s are all integral, the EQS is a compact bearing design. EQS will maintain a low profile for all design displacements.

**LOW TEMPERATURE PERFORMANCE**

Unlike rubber isolators, the EQS is not significantly affected by low temperature extremes.

**NO ELEVATION CHANGE**

The EQS is a flat sliding isolator so that there is no elevation change during dynamic loading.
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The EQS transfers the energy of a moving mass (kinetic energy), such as a bridge superstructure during an earthquake, into heat and spring (potential) energy. This is done via the sliding material interface and the MER, which connects the superstructure to the substructure. EQS dissipates the energy through friction, and each bearing can be designed to achieve a wide variety of energy dissipation levels. This control over the design gives the engineer the ability to optimize the structure’s response to a seismic event.

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VERSATILE
The EQS can be adjusted to the desired level of stiffness and damping. This means that the system can be fine-tuned for a wide range of response characteristics.

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NO ELEVATION CHANGE
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Although originally designed for bridges, EQS has also been used to mitigate seismic forces on buildings. Custom designed EQS bearings with vertical MERs and dampers were utilized on the UNASUR building in Quito, Ecuador.
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ERADiQUAKE SLIDING ISOLATION BEARINGS

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