

**EVER-LEVEL BASE ISOLATOR****Earthquake Protection for Homes, Commercial Buildings and Other Structures**

When an earthquake strikes, the ground accelerates. The ground acceleration, in turn, causes buildings to accelerate. This may cause damage to both the buildings and their contents. The severity of the damage depends in large part on the frequency of the input, and the frequency response of the building. By increasing the period of the frequency response, the acceleration of the building and its contents can be greatly reduced. This can be accomplished by isolating the building from its foundation. We would like to announce the design completion of a unique and new foundation system for homes and other small structures. "Base isolators" that separate a building from the foundation are presently found only on very large buildings and bridges.

Harold L. Stiles, Knud B. Pedersen and Shyam Shukla were the primary inventors and over the last three years have developed the base isolator system presented here. Ever-Level Foundation Systems, Inc., a California corporation was founded in June 1999.

The Ever-Level Foundation System (ELF) is designed to mitigate damage from, and danger associated with, earthquakes. Computer analyses and a full scale model test on a two story house have been completed and verify that ELF reduces forces induced on buildings by as much as 50%. The system was tested independently at the University of Nevada, Reno. The test was performed in June 2000, under the supervision of Dr. "Saiid" Saiidi, Ph.D., P.E. The tests simulated the El Centro earthquake on a shake table (a platform that can simulate any earthquake on record) located in the Earthquake Engineering Laboratory on the Reno campus. The tests confirmed previous computer modeling.

Television news broadcasts from Reno NBC Channel 4 on June 14, 2000 and from Oakland KTVU Channel 2 on September 5, 2000 carried news stories showing the system in action during the test.

This invention is unique and innovative because it does not depend on a large mass and friction plates such as the isolators used for hotels, skyscrapers and bridges. The Ever-Level Base Isolator consists of a ball and socket and an elastomeric bearing pad similar to, but smaller than, those made for bridges and large buildings. The design has been recently awarded a U. S. patent.

This new foundation system is also superior to other foundation systems for use on compressive or expansive soils such as adobe, clay, etc. because the system is a pier-based foundation that can be re-leveled any time after construction to accommodate soil movement and shifting. Traditional slab concrete foundations are not flexible and cannot absorb seismic movement. Although a building may survive an earthquake, incidental, unnecessary damage can be devastating to a small building owner, especially in this time of very high deductibles for homeowner's insurance.

At this time, no units have been installed other than for the shake table test. Our web site, which shows a video, can be found at [ever-level.com](http://ever-level.com).

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