

Protecting Your Property from Earthquakes

Framed Pictures and Mirrors

Are You At Risk?

If you aren't sure whether your house is at risk from earthquakes, check with your local building official, city engineer, or planning and zoning administrator. They can tell you whether you are in an earthquake hazard area. Also, they usually can tell you how to protect yourself and your house and property from earthquakes.

What You Can Do

Earthquake protection can involve a variety of changes to your house and property -- changes that can vary in complexity and cost. You may be able to make some types of changes yourself. But complicated or large-scale changes and those that affect the structure of your house or its electrical wiring and plumbing should be carried out only by a professional contractor licensed to work in your state, county, or city. One example of earthquake protection is stabilizing framed pictures and mirrors so that they will remain in place during an earthquake. This is something that many homeowners can probably do on their own.

Mount Framed Pictures and Mirrors Securely

During an earthquake, framed pictures and mirrors that are not securely attached to walls can easily fall. Large pictures and mirrors can cause injuries when they fall, and the broken glass that often results increases the potential for injury.

As shown in the figure, one way to mount framed pictures and mirrors securely is to use long-shanked, open eye-hooks instead of traditional picture hangers. The eye-hooks must be long enough to penetrate the wall stud as well as the drywall or plaster. Eye-hooks used in this way are much less likely to pull out of the wall than picture hooks installed with nails that penetrate only the drywall or plaster. Also, an alternative to running wire across the back of the picture or mirror is to use closed eye-hooks securely screwed into the back of the frame.

Tips

Keep these points in mind when you hang framed pictures or mirrors:

- The number of eye hooks you need for a picture or mirror will depend on its size and weight. Large pictures and mirrors will be more stable when mounted on two hooks rather than one.
- Make sure that eye-hooks penetrate not just the wall but the studs behind it as well. Eye-hooks embedded only in drywall or plaster are likely to pull out. To be embedded deeply enough, eye-hooks should be at least 12 inches long.
- Regardless of whether you use picture wire or closed eye-hooks on the back of the picture or mirror, make sure the hooks, screws, or other types of mounting hardware are securely attached to the frame.
- If possible, don't hang large pictures or mirrors in places where they are more likely to fall on someone, such as over beds, chairs, or couches.

Estimated Cost

The cost of mounting a picture or mirror with eye-hooks will depend on its size and weight. In general, for a large picture or mirror that requires two eye-hooks, you can expect the cost to be approximately \$3 to \$5. This amount covers only the hardware you will have to buy, not any tools you use or the value of your time. If you hire a contractor or handyman to do the work, you will have to pay for time as well as materials.

Other Sources of Information

Seismic Retrofit Training for Building Contractors and Building Inspectors: Participant Handbook, FEMA, 1995
Reducing the Risks of Nonstructural Earthquake Damage: A Practical Guide, FEMA-74, 1994
Protecting Your Home and Business from Nonstructural Earthquake Damage, FEMA, 1994
To obtain copies of these and other FEMA documents, call FEMA Publications at **1-800-480-2520**.
Information is also available on the World Wide Web at <http://www.fema.gov>.

