Earthquake Home Hazard Hunt

Recommendations for reducing earthquake hazards in your home are presented on the other side of this poster.

- Brace or replace masonry chimneys
- Secure ceiling fans and hanging light fixtures
- Strap down televisions and other expensive or hazardous electrical components
- Strap down computers
- Strap cabinets to wall studs; use latches to keep cabinet doors from flying open during an earthquake
- Secure cabinets to wall studs; use latches to keep cabinet doors from flying open during an earthquake
- Securely fasten or relocate heavy pictures and mirrors over beds and furniture
- Brace water heaters and ensure that gas models have flexible connections
- Strengthen garages that have living space above them
- Ensure that gas appliances have flexible connections
- Upgrade unbraced crawlspace walls (or other foundation problems)
- Strap bookcases and shelves to walls to prevent tipping
- Know how and when to shut off utilities
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Correcting Problems

Utilities

Teach responsible members of your family how to turn off electricity, gas, and water at main switches. Caulk. Do not shut off gas unless an emergency exists. If gas is ever turned off, a professional must restore service. Contact your local utilities for more information.

Label the water shut-off valve, found where water enters the home, and the main water shut-off valve found with the meter in a closet behind the meter.

Weak Crawlspace Walls

Wooden doors and end walls are sometimes built on top of an exterior foundation to support a home and create a crawlspace. These walls carry the weight of the home. During an earthquake, these walls can collapse if they are not braced to resist horizontal movement. If the walls fail, the house may shift or fall.

You can look under your house in the crawlspace to see whether the end walls are braced. If the walls are braced, check to see if the wood studs are braced with plywood panels or diagonal wood sheathing. If your house has neither of these, the wood and masonry walls are probably insufficiently braced or braced incorrectly. Please note that horizontal or vertical wood siding is not strong enough to brace wood stud crawlspaces.

Plywood or other wood products allowed by code should be nailed to the studs (see Figure A) to strengthen your foundation. The type of wood product used, the plywood thickness, and nail size and spacing are all important when making this upgrade.

Many types of foundations walls are used in the United States that may need upgrading to resist earthquake damage. Check with your local Building Department or a licensed architect or engineer for recommendations on how to determine whether your foundation walls are likely to be damaged in an earthquake and what upgrades may be needed. Check with local officials for permit requirements before starting work.

Remember, it is very expensive to lift a house, repair the foundation, and walls and roof above the ceiling joists. Have the roof inspected by a professional to determine the existing condition of the roof. If the roof is in poor condition, it is usually cheaper to replace it than to repair it.

Garages With Living Spaces Above

The large opening of a garage door and the weight of a secondary structure built over the garage can result in severe damage to the garage from being too weak to withstand earthquake shaking, resulting in severe damage. In some cases, the entire outer edge of the wall on each side of the garage door opening are not reinforced or braced, the potential for earthquake damage is greater.

Look for the area around the garage door opening are three braces or plywood panels? If not, strengthening may be needed. Consult a licensed architect or engineer to determine the strengthening required to upgrade your garage walls. Your home may need to have plywood paneling or a steel frame designed and installed around the garage door opening (see Figure B). Remember to check with your local Building Department before starting work.

Chimney Bracing

To prevent the chimney from breaking away from the house, the chimney should be braced (see Figure C). If your roof doesn’t have solid sheathing, consult a licensed builder or engineer to determine the strengthening required to upgrade your chimney walls.

Check for cracks in your home’s exterior or any masonry chimneys. If you have chimneys, you may need to brace your home to prevent collapse.

Strengthen connections between posts and beams with bracing.

With the knowledge you now have from the information provided above, you can determine whether or not your home has an earthquake safety plan. Children can share this new awareness in the classroom. Determine whether their school has a current earthquake plan, whether earthquake drills are held, and what the policy is if an earthquake occurs while school is in session.

Further Information

For more information about earthquake preparedness and safety, refer to the following publications, which are available from the FEMA Distribution Center at 1-800-480-2520. As noted, some are available for download from the following websites:

After Disaster Strikes: How to recover financially from a natural disaster, FEMA 291
Are You Ready? An Introduction to Citizen Preparedness, IS-22. Full publication and individual sections available online at: http://www.ready.gov/are-you-ready
Before Disaster Strikes: How to make sure you're financially prepared to deal with a major disaster, FEMA 291
Earthquake Safety Checklist, FEMA 526
http://www.fema.gov/media-library/assets/documents/3234
Earthquake Safety Guide for Homeowners, FEMA 530
http://www.fema.gov/media-library/assets/documents/1017
Preparing for Disaster for People With Disabilities and Special Needs, FEMA 476
http://www.ready.gov/ndia/disasters-concierge-functionedsneeds
Visit the FEMA website at: http://www.ready.gov
Visit FEMA’s Earthquake Information website at: http://www.fema.gov/earthquakes
To learn about the National Earthquake Hazards Reduction Program (NEHRP) and more visit: http://www.natlsep.org