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
- Secure cabinets to wall studs; use latches to keep cabinet doors from flying open during an earthquake
- Ensure that gas appliances have flexible connections
- Brace water heaters and ensure that gas models have flexible connections
- Strengthen garages that have living space above them
- Strap bookcases and shelves to walls to prevent tipping
- Know how and when to shut off utilities
- Upgrade unbraced crawlspace walls (or other foundation problems)
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**Utilities**
- Touch responsible members of your family to turn off electricity, gas, and water at main switches. Caution: 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 house) and the main water shutoff valve found with the meter in a covered box in the yard or basement.

**Weak Crawlspace Walls**
- Wooden doors and wood walls are sometimes built on top of an exterior foundation to support a house and create a crawlspace. These walls carry the weight of the house. During an earthquake, these walls can collapse if they are not braced to resist horizontal movement. If the wall fails, the house may shift or fall.
- You can look under your house in the crawlspace to see whether the roof, wall studs, or wood wall stud are braced with plywood panels or diagonal wood sheathing. If your house has neither of these, the wood and wood walls are probably insufficiently braced or not braced at all. Please note that horizontal or vertical wood siding is not strong enough to brace wood stud walls.
- Plywood or other wood products assembled 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.
- Masonry chimneys are also commonly used in the United States and need reinforcement to resist earthquake damage. Check with your local Building Department or a licensed architect or engineer for recommendations on how to determine whether your foundations and 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 replace the roof. If you have a house that is below grade, it is less expensive to reinforce the roof and foundation than it is to replace a home.

**Garages With Living Spaces Above**
- The large opening of a garage door and the weight of a secondary roof built over the garage can result in the garage doors being too weak to withstand earthquake shaking, resulting in severe damage. If the garage sections of the walls on each side of the garage door opening are not reinforced or braced, the potential for earthquake damage is greater.
- Look at the area around the garage door opening to see if there are 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 house may need to have plywood bracing or a steel frame designed and installed around the opening (see Figure B). Remember to ensure a permit is obtained from your local Building Department before starting work.

**Chimney Bracing**
- To prevent the chimney from breaking away from the house, you should have it firmly attached to the framing of the roof with sheet metal (see Figure C). If your roof doesn’t have solid sheathing, consider adding plywood panels above the ceiling joists. Have the chimney inspected by a professional to determine whether the chimney should be braced or replaced.

**Hanging Objects**
- Prevent wall hangings from bouncing off walls.
- Secure mirrors, picture frames, and other objects on closed books.
- Secure the bottom corners with earthquake putty or adhesive pads.
- Place only soft art such as tapestries over beds and sofas.

**Home Electronics**
- Electronics are heavy objects and should be secured. Secure TVs, stereo, computers, and microwaves with earthquake-resistant flexible steel straps and brackets for easy removal and relocation (see Figure D).
- Place electronic devices on low shelves or cabinets.

**In the Kitchen**
- First, secure all cabinets above stair landing to the wall studs.
- Use brackets designed for earthquake, child-proofing, or hardware to secure kitchen cabinets from falling during an earthquake (see Figure E).
- Place only soft art such as tapestries over beds and sofas.

**Follow these important guidelines:**
- Secure all tall, top-heavy furniture such as bookcases, wall units, and entertainment centers (see Figure F).
- Attach them securely to the studs or walls of the wall system with straps.
- Secure the top on both the right and left sides of the unit, into wall studs. not just into the drywall.
- Use flexible means for securing items such as nylon straps to allow for independent movement of the wall, preventing the strains on the brackets.
- Secure loose shelving by applying earth-quake proofing putty on each corner bracket.
- Use heavy metal straps and angle bracing on each wall stud.

**Water Heaters**
- Water lines should be guarded (see Figure G). There are many solutions—all relatively inexpensive.
- Purchase and install a strap kit or have your local hardware store do it.
- The gas and water lines should have flexible connectors that are earthquake-resistant. Use one that is not braced or attached to the wall studs.
- The gas and water lines should also be guarded (see Figure F).

**Water Coolers**
- Check for possible flying glass.
- Check your roof. Make sure all tiles are secured to the roof. Loose tiles could fall.
- Check the outside of your home. What about your chimney? Masonry chimneys above the roof line, as bricks may fall into the house.
- Use brackets designed for earthquake, child-proofing, or hardware to secure kitchen cabinets from falling during an earthquake (see Figure F).
- Place only soft art such as tapestries over beds and sofas.

**Walk Through Your Home**
- Look at the roof, outside walls, and what the policy is if an earthquake occurs while school is in session.
- Your company has an earthquake safety plan.
- Check for possible flying glass.
- Check your roof. Make sure all tiles are secured to the roof. Loose tiles could fall.
- Check the outside of your home. What about your chimney? Masonry chimneys above the roof line, as bricks may fall into the house.
- Use brackets designed for earthquake, child-proofing, or hardware to secure kitchen cabinets from falling during an earthquake (see Figure F).
- Place only soft art such as tapestries over beds and sofas.

**When to Think about Your Family’s Family From Earthquakes**
- You should store your family’s documents, such as insurance policies, deeds, property records, birth certificates, and other important papers, in a safe place away from your home (e.g., safety deposit box). Make copies of important documents for your disaster supplies kit.
- Consider saving money in an emergency savings account that could be used in any crisis. Back up critical information on your computer and keep a copy in a safe place away from your home.

**More Information**
- For more information about earthquake preparedness and safety, refer to the following websites, which are available from the Federal Emergency Management Agency (FEMA) at 1-800-488-2250. As noted, some are available for download from the FEMA website.
- After Disaster Strikes: How to recover financially from a natural disaster, FEMA, 2002.
- Before Disaster Strikes: How to make sure you’re financially prepared to deal with a natural disaster, FEMA, 2002.
- Visit the FEMA website at: http://www.ready.gov
- Visit the FEMA website: http://www.ready.gov/
- Visit FEMA Ready website at: http://www.ready.gov to learn about protective measures to take before, during and after an emergency.