

North American Emergency Management



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HOME EARTHQUAKE INFORMATION

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The key to surviving any disaster situation is planning. To survive an earthquake several factors must be considered. The time of day, location of family members at the time, the type of structure you are in and the utilities that supply that structure. Every plan should include escape routes at home and work, a reunification site and a telephone contact for communication. Discuss plans with all household members. Teenagers and adult members of the household should share in the actual preparation decisions. Be sure to consider any special needs or disabilities of family members and unique natural or man-made hazards near your home. Make sure everyone in your household knows where the closest fire station, hospital, and police station are.

ESCAPE ROUTES..... In case of fire, have escape routes planned for each part of your home or work place. It is important that every member of your household know the quickest and safest escape routes from each room, and all the possible hazards that could be in their path.

REUNIFICATION PLAN..... You should decide together where you will meet if a major quake hits when the family is separated. Have plans for each member of the family to reach the safe refuge area. Make sure you have adequate emergency supplies in the car as well as at the workplace.

This reunification site is also where the family can gather if the earthquake has damaged your home. At this site the family can evaluate the situation, make plans for appropriate actions, and be safe from injury due to aftershocks. It should be near your home, in the open, and away from any hazards, especially overhead hazards that can fall and injure family members. A safe refuge could be your backyard or front yard, a nearby park, a parking lot, or even the sidewalk.

There may be no means of transportation except by foot if there is severe damage to the roadways. It may take days for some family members to reunite. It will be easier to deal with the stress of this separation if the household has considered the possibilities beforehand. Try to have every member of your family prepared to deal appropriately with any emergency, and then trust their good sense and knowledge to help them through.

TELEPHONE CONTACT..... It is extremely important that you do not use your telephone indiscriminately after an earthquake, but check them to make sure that the receiver has not been shaken off the hook. The telephone should only be used for emergency calls.



You should have a telephone contact who lives out of the area, preferably out of the state. Separated family members can use this contact to find out if everyone in the family is OK, to relay messages, and to set up an alternative meeting place. Family members not living in the area can call this contact to find out if everything is OK.

Remember, after an earthquake, check all your phones to be sure that they have not shaken off the hook and are tying up a line.

AT NIGHT..... Have a flashlight and a pair of shoes under everyone's bed. A major quake will probably disrupt electrical service and if it happens at night you will need a flashlight to see. No one wants to cut their feet on broken glass or fallen objects walking to the closet to get a

pair of shoes, so place them, with the flashlight, in a plastic bag. Then tie the bag to the leg of the bed. That way the bag will stay with the bed and glass will not fall into the shoes as the earth moves.

UTILITY SHUTOFFS..... Know where the utility shutoffs are. Locate your gas, electrical, and water shutoff, and know how to operate them. It is recommended that the shutoffs be painted white or a light reflective color so they are highly visible in dark or smoky conditions. Have a wrench next to your gas shutoff.

PRACTICE..... After all the preparation is done, practice your plan to see if it actually works. Make it fun but try to make it real. Practice is especially meaningful if it is done at night, when it is dark, with all the electricity off.

72 HOUR SUPPLIES..... Building a 72 hour supply kit should be part of your planning efforts. Put together a basic kit for your home, for your car, and one for work. The home kit should provide the basic equipment and provisions needed by the family for at least a 72 hours period after a quake. The car and work place kits should have enough supplies to last until you can get to the reunification site.

The container should be large enough to hold all the supplies but small enough to handle without difficulty. A day pack or small duffel bag works well for the car or work place, a plastic garbage can is suggested for the home. In the appendix of this book there is a suggested list of supplies for your home, car, and work place.

PREPARING YOUR STRUCTURE..... Single family wood frame buildings are the most earthquake resistant of any type of construction. The building moves with the quake. The key to riding out a quake is to make sure your home behaves as one continuous unit. The following measures should be taken to help protect your home.

1. Your home should be bolted to the foundation. The foundation's condition should be checked to see if it is still in good shape, especially in older homes. Houses built before 1940 were not required to have sill-bolting, and some houses built since then do not have them. Standard sill bolts, 5/8" by 8 1/2", should be installed every 4 feet if you do not have them now.
2. If your house has a crawl space between the ground and the first floor, check to see if you have cripple walls. Plywood shear paneling used to cover the entire wall area will stiffen these walls. In the Loma Prieta quake several houses that were bolted to their foundations partially collapsed because they had no cripple wall shear support.
3. If your home was built before 1960 your chimney may not be properly reinforced and tied into the building. Damaged or falling chimneys was one of the biggest hazards in the Loma Prieta quake.

SAFETY SURVEY OF YOUR HOME..... Look at each room in your home with "Earthquake Eyes". Take some time and sit in each room and think "If a major quake hit right now what would injure me". Then fix the hazard. To prevent injury and reduce damage, each room of your home should be carefully examined for potential hazards. The following are some suggestions to correct these hazards. Use them as a starting point in the examination of your home.

Kitchen: An unprepared kitchen is probably the most hazardous room in the house. Shattered glass, spilled chemicals, gas fed fires, and falling objects are all potential disasters in an unprepared kitchen.

Read the labels on all household chemicals. Segregate chemicals according to manufactures' suggestions. In the kitchen, all chemicals should be stored at floor level in a secure cabinet.

All gas appliances must be installed with a flexible gas line.

Install latches on all kitchen cabinet doors. "Child proof" latches are inexpensive and are not visible from the exterior. These latches will prevent breakables and heavy objects from falling out of the cabinets

prevent breakages and heavy objects from falling out of the shelves. Store the heaviest items on the lower shelves. If they happen to break through the latches, they will not injure anyone.

Put guard rails on open shelves so that items cannot slide off. To display fragile objects on open shelves use industrial strength "Velcro" tape or a silicon adhesive on the bottom. Attach hanging plants, clocks, paintings, and kitchen pots to a wall stud. Heavy appliances on wheels should be blocked with a door stop, or their wheels should be locked to prevent them from rolling.

Bedrooms: You probably spend more time in this room than in any other in the house. When examining the hazards in this room, pay careful attention to objects that could fall and injure you in bed or fall and block your escape routes.

Beds should not be placed under a window. Falling glass is one of the major causes of injury in an earthquake. Beds should be located by an interior wall away from windows or anything that could fall on them. Pictures, mirrors, or other heavy objects mounted on the wall above the bed should be removed. If beds with wheels are on bare floors, these wheels should be locked, or non-skid coasters should be placed under the wheels.

Attach tall furniture to wall studs to prevent it from falling over and blocking escape routes. Remove heavy objects from the upper shelves of bookcases, closets, or the tops of dressers. Place all heavy objects on the floor or low shelves.

Each bedroom of your house should have a flashlight and a pair of shoes in a plastic bag tied to the leg of the bed; the flashlight to see at night and the shoes to protect feet from broken glass.

Bathrooms: Broken glass is the greatest potential hazard in the bathroom. Mirrors, shower doors, and toiletries can all fall and break. This makes the bathroom, although probably the smallest, potentially the most dangerous room in the house.

Medicine cabinet doors should be equipped with a "child-proof" latch to prevent things from falling out. Glass containers should not be stored on open shelves. Read the labels on cleaning supplies, segregate them according to the manufacture's directions, and store them at floor level in a secure cabinet.

Living Areas of the Home: All tall furniture in the living room, dining room, or den should be secured to the wall studs. TVs, computers, and stereos should be secured to shelving with industrial strength "Velcro" to prevent falling. Paintings and mirrors should be attached using security hangers or anti-theft hangers. Velcro in the bottom corners also prevents them from moving during a quake.

Garage, Basement, and Laundry Room: The water heater should be securely double strapped to the studs in the wall behind it; one strap about 1/3 from the top and the second strap about 1/3 from the bottom. Plumbers tape and lag bolts should be used and are readily available at any hardware store. The water heater should also be attached to the gas supply by a flexible gas line with shutoff that will move in the event of a quake.

Remove all heavy objects from upper storage shelves especially around the car. All heavy objects should be at floor level.

Hazardous materials should be segregated and stored in well marked, unbreakable containers. They should also be stored in a low cabinet with an earthquake-proof latch. Dispose of any hazardous materials that are no longer needed at a hazardous materials collection facility in your area.

PREPAREDNESS CHECK LISTS

PERSONAL PREPAREDNESS

- Make a disaster plan
- "Safety Survey" your home and work place
- Plan escape routes
- Choose reunification site
- Establish a Telephone contact out of the area
- Store a 72-hour emergency supply kit
- Practice disaster plan

HOME AND WORKPLACE PREPAREDNESS:

- Locate, mark, and test the operation of utility shutoffs
- Have a shutoff wrench next to the gas shutoff
- Flexible gas lines on all appliances
- Segregate all hazardous materials, and store in secure cabinet
- Remove heavy objects from upper shelves
- Secure all objects on walls
- Attach tall furniture and bookcases to wall studs
- Strong latches on kitchen cabinets
- Water heater strapped to wall studs
- Appliance and bed wheels blocked
- Office equipment and electronics secured
- Have emergency supplies in car and at office

STRUCTURE P PREPAREDNESS:

- Chimney well supported
- Foundation bolted
- Cripple walls reinforced

WHAT TO DO WHEN THE EARTH STARTS SHAKING

REMAIN CALM!

There is no one safe place to be during an earthquake. The following are some recommended actions. The specific actions that you take should be adapted to your situation and location at the time of the quake.

If you are inside a building when an earthquake hits, stay there. ***SEEK IMMEDIATE SHELTER...DUCK, COVER, AND HOLD ON.*** Try to get under something that will protect you from falling debris such as a table or a desk and hold on to it. Stay there until the shaking stops. Try to get at least 15 feet away from any windows so you are not cut by flying glass. Never run outside during a quake. Most people are injured by falling debris. Running outside just increases your chances of being injured. If you are in a hallway or open area of a building, sit down against a wall and cover your head and neck with your hands. Remain there until the shaking stops. If you are in an elevator, go to the closest floor and get out. Sit down and cover your head and neck with your hands and remain there until the shaking stops. NEVER TAKE ELEVATORS AFTER AN EARTHQUAKE.

If you are outside when an earthquake hits, stay there. Move away from buildings to an open area, if one is readily available. Watch out for downed power lines.

If you are driving when an earthquake hits put your emergency flashers on and slow to a stop. Watch for traffic approaching from the rear while doing this. Turn the ignition off and set the parking break. Remain inside the car until the shaking stops. Do not stop on overpasses, underpasses, or bridges, and be aware of overhead hazards such as power lines or falling building debris.

In the downtown area it is safer to remain inside the buildings after an earthquake. Unless the building has suffered structural damage or there is a fire, chemical spill, or a gas leak, it is much safer to remain inside. There

are no open areas in downtown areas far enough from glass or other falling debris to be considered safe refuge sites. When windows in a high rise building break, the glass does not always fall straight down; it can catch a wind current and sail great distances. Outside is no place to be in the downtown area during or after an earthquake because of falling objects. Aftershocks can cause additional damage, and more glass and debris can fall.

This reunification plan must consider many possibilities. Will family members at work go home, or, will you meet some other place? Who will pick up the children at school? What if a family member is out of the area when the quake hits? What if the home is structurally damaged and uninhabitable? Your plan should answer all your questions.