Earthquake Preparedness

It may be surprising to know that most injuries during an earthquake occur when people fall while trying to walk or run during the shaking. They are often hit by flying or falling items (non-structural). While there is currently no method to provide sufficient advanced notice to prepare for an earthquake (other than early warning systems that provide a few seconds), the hazards are predictable and may be reduced through identification, planning, and mitigation strategies. This preparedness resource summarizes guidance in the three areas:

- Preparing for an earthquake
- Actions to protect yourself during an earthquake
- Post-earthquake
- Resources

Preparing for an Earthquake

Create an emergency action plan. Be sure to annually practice evacuation procedures, review your plan, and communicate expectations and responsibilities to all affected employees.

☐	We recommend having a professional engineer assess the building's structure and recommend necessary retrofitting such as foundation bolting, cripple wall bracing and reinforce chimneys, particularly for pre-1978 3-story wood-frame buildings or structures that contain ground floor parking over two-stories.
☐	Take advantage of the Federal Emergency Management Agency's (FEMA) National Incident Management System (NIMS) training for protecting people/property during emergencies. Local, state and tribal jurisdictions are required to adopt NIMS in order to receive federal Preparedness Grants.
☐	Anchor tall furniture including bookcases, filing cabinets, and other furniture that are more than four feet in height to wall studs or masonry.
☐	Secure cabinet doors with latches.
☐	If you're in an area prone to earthquakes, you may be required to secure your water heater by strapping it in two locations (upper and lower one-third of the unit). State and local jurisdictions may have more specific requirements.
☐	Secure large appliances with flexible cable, braided wire, or metal straps screwed into wall studs or masonry.
☐	Picture frames, mirrors, and other hanging items should be secured with closed hooks or earthquake putty. Avoid hanging heavy objects over seated areas.
☐	Select a "safe place" in your workplace and at home–away from windows and tall furniture. A sturdy desk or table is best. Protect yourself by keeping your head down.
☐	Train all employees annually in fire extinguisher use.
☐	Organizations should have at least one employee per location, per shift, trained in first aid and Cardiopulmonary Resuscitation (CPR). (Additional persons if the organization has a larger number of employees). Training is offered by the American Red Cross, American Heart Association or National Safety Council and other reputable organizations.
☐	Make sure your first aid kits are stocked and readily available.
☐	Participate in the annual "Great Shakeout", scheduled for October 15, 2020.
☐	Consider planning events and communication campaigns in the National Earthquake month, which is October.

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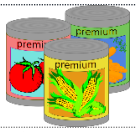
☐	Sign up for the United States Geological Survey ShakeAlert Earthquake Early Warning System to be notified before the shaking arrives.

Maintain an emergency kit at home and at the workplace that includes the following items:

☐	Non-perishable food, sufficient for 72 hours, preferably for two weeks. Choose foods that do not require refrigeration, cooking, water, or special preparation. Don't forget the manual can opener.	
☐	Flashlights, a radio with spare batteries, and cell phone charger (hand crank, solar or charge from car outlet).	
☐	Water 1 gallon per person per day, for 72 hours minimum, ideally up to 1 week.	
☐	Fire extinguishers (Class ABC) Check that it is not out of date and it is fully charged.	
☐	Special Needs This may include medications, eyeglasses, contact lens solution, hearing aid batteries, personal hygiene items, and items for infants.	
☐	Important papers and cash	
☐	Tools Pipe wrench, crescent/adjustable wrench, lighter, matches, and a whistle.	
☐	Clothes Jacket, long pants, long-sleeve shirt, sturdy shoes, sleeping bag/warm blanket, hat, mittens or gloves, comfortable walking shoes, and scarves.	

During an Earthquake

When shaking begins, the next few seconds could result in survival or serious injury. Know what to do when indoors, outdoors, or in a moving vehicle.

Indoors

- Drop to your hands and knees
- Cover your head/neck with your arms
- Hold on to sturdy shelter
- Do not run outside–stay where you are until the shaking stops
- Do NOT get in a doorway as this does not provide protection from falling or flying objects

Outdoors

- Move away from buildings, streetlights, and utility wires
- Once in the open, drop, cover, and hold on until the shaking stops
- If in a large city, you may need to duck inside a building to avoid falling debris
- Stay put until the shaking stops

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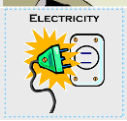
In a Moving Vehicle

- Stop as quickly and safely as possible, pull to the side of the road and stay in the car
- Avoid stopping near or under buildings, trees, overpasses and utility wires
- Avoid roads, bridges or ramps damaged by the earthquake

Post-Earthquake

There will likely be after-shocks after the initial earthquake. Wait a minute before getting up and checking for damage and injuries. If able, safely move to exit the building and take essential items only. Below are some additional safety measures to be aware of:

	Check for injuries and provide assistance. Assist with rescues if you can do so safely. Do not move seriously injured people unless in immediate danger.
	Stay away from damaged areas. If you smell gas, there is likely a leak. Call 9-1-1. Have utilities inspected by a qualified professional prior to occupying the building.
	Use a flashlight to inspect your home. Turn it on outside before entering as the battery may produce a spark that could ignite leaking gas.
	Be aware of possible tsunamis if you live in a coastal area.
	Text is best. Texting from your cell phone requires less bandwidth and is more likely to reach the recipient.
	If you are trapped, do not move or kick up dust. Tap on a pipe or wall so rescuers can locate you.
	Do not touch electrical equipment if it is wet or you are standing in water.
	Monitor local news reports via radio or cell phone for emergency information and updates.

Following a major disaster, you'll need to begin the recovery process. Your written action plan should be set in motion to allow the process to begin immediately. Below are numerous resources on preparation, training, codes and standards, and toolkits.

Additional Resources

How to Prepare for an Earthquake
https://www.ready.gov/sites/default/files/2020-03/how-to-prepare-for-an-earthquake.pdf

When the Earth Shakes (animated video)
https://www.youtube.com/watch?v=MKILThtPxQs&feature=youtu.be

Be Prepared for an Earthquake (FEMA)
https://www.fema.gov/media-library-data/1527865427503-bbf6d7e61340e203c4607677cb83a69d/Earthquake_May2018.pdf

National Incident Management System (NIMS)–Implementation and Training
https://www.fema.gov/emergency-managers/nims/implementation-training

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https://www.fema.gov/sites/default/files/2020-07/nims_training_program_may2020.pdf

Earthquake Risk-Federal Emergency Management Agency (FEMA)
Links to: State Assistance, Seismic Building Codes & Standards, Earthquake Trainings, Earthquake Hazard Maps
https://www.fema.gov/emergency-managers/risk-management/earthquake

Develop and Implement an Emergency Action Plan (EAP)
OSHA: https://www.osha.gov/SLTC/etools/evacuation/implementation.html
OSHA: Create Your Own Emergency Action Plan
https://www.osha.gov/SLTC/etools/evacuation/expertsystem/default.htm
Risk Assessment Table: https://www.ready.gov/sites/default/files/2020-07/business_risk-assessment-table.pdf

FEMA: QuakeSmart Toolkit https://www.ready.gov/sites/default/files/2020-04/ready-buisiness_quakesmart_toolkit.pdf

American Red Cross (First Aid Training)
https://www.redcross.org/take-a-class/first-aid

For additional information contact: Alliant Risk Control Consulting at riskcontrol@alliant.com or (949) 260-5042.

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