



EARTHQUAKE

What is it?

Earthquakes are the vibrations caused by rocks breaking under stress. The underground surface along which the rock breaks and moves is called a fault plane. Earthquakes in Australia are usually caused by movements along faults as a result of compression in the Earth's crust.

The size or magnitude of earthquakes is determined by measuring the amplitude of the seismic waves recorded on a seismograph and the distance of the seismograph from the earthquake. These are put into a formula which converts them to a magnitude, which is a measure of the energy released by the earthquake.

For every unit increase in magnitude there is roughly a 30-fold increase in the energy released. For instance, a magnitude 6.0 earthquake releases about 30 times

more energy than a magnitude 5.0 earthquake, while a magnitude 7.0 earthquake releases about 900 times (30 x 30) more energy than a magnitude 5.0. Earthquake magnitude was traditionally measured on the Richter Scale. It is often now calculated from seismic movement, which is proportional to the fault area multiplied by the average displacement on the fault.

The focus of an earthquake is the point where it originated within the earth. The earthquake epicentre is the point on the Earth's surface directly above the focus. *(Information provided by GeoScience Australia.)*

What are the local risks?

Earthquake hazard in the region is high in Queensland terms, moderate in Australian terms and low in global terms.

On August 18, 2016, at 2.30pm the second largest earthquake on record in Queensland of 5.8 magnitude occurred just offshore within the Whitsunday region, about 50km from Bowen. This earthquake was felt across the entire region and large amounts of Queensland, and was followed by more than 50 aftershocks.

What should I do?

Before an earthquake (now)

- Find out how and where to turn off power, gas and water.
- Plan with your family (or household) where you will meet if separated.
- Know your safe areas during an earthquake.
- Check your insurance policy to make sure it is adequate and that you are covered for damage caused by earthquakes.

During an earthquake

- If indoors—stay there (clear of falling debris outside).
- If in a vehicle—stop in an open area until the shaking stops.
- Keep clear of windows, chimneys and overhead fittings. Shelter under and hold onto a door frame, strong table or bench.
- In high-rise buildings, stay clear of windows and outer walls. Shelter under a desk near a pillar or internal wall.
- In crowded buildings, do not rush for doors, but move clear of overhead fittings and shelves.
- Do not use elevators.
- On a city street, shelter from falling debris under strong archways or doorways of buildings. Don't go under awnings as they may collapse.

- If outside, keep well clear of buildings, overhead structures, walls, bridges, power lines and trees.
- Beware of downed power lines and road damage, including overpasses and bridges.
- Listen to your car radio for warnings before moving.

After an earthquake

- Turn off electricity, gas, and water. Do not light matches until after you have checked for gas or fuel leaks.
- Check for injuries and apply first aid. Do not move seriously injured people unless they are in immediate danger.
- Check for broken water, sewerage or electrical mains.
- Do not use the telephone immediately (to avoid congestion) unless there is a life-threatening situation.
- Check for cracks and damage to your building.
- Evacuate the building if it is badly damaged and be prepared for aftershocks.
- Do not waste food and water as supplies may be interrupted.
- Listen to your local radio station and heed warnings and advice on damage and service disruptions.
- Try to avoid driving unless in an emergency (to keep the streets free for emergency services).
- Do not go sightseeing or enter damaged buildings.
- Try to stay calm and help others if possible.

USEFUL LINKS:

Geoscience Australia
ga.gov.au - and search "earthquake"

