

QUAKE SAFE YOUR HOME

FIX. FASTEN.
DON'T FORGET.



Natural Hazards
Commission
Toka Tū Ake

www.naturalhazards.govt.nz/be-prepared



@naturalhazardscommission



Quakes

And New Zealand

Australian Plate

Pacific Plate

Aotearoa didn't get its nickname of 'the shaky isles' for nothing. We Kiwis live in one of the most seismically active countries in the world and every year our land experiences around **150 earthquakes** strong enough to be felt by people.

Most quakes have little impact on us, but even our recent history is scattered with numerous quakes that have caused significant damage to property and injuries to people.

We know that another damaging quake will happen, but we don't know exactly when, or where. What we do know is that preparing today will help protect your home and your loved ones.

Preparing for earthquakes is everyone's business



Whether you live in Auckland or Alexandra. Rent or own. Live in a house or apartment. We all need to take **Fix. Fasten. Don't Forget.** steps to prepare our homes for earthquakes.

Many of the steps in this booklet can be completed by those with basic DIY skills. Others are best left to the pros. If you're unsure about what work might be restricted, check with your local council or a licensed building practitioner. If you are going to tackle some of the work yourself, be sure to stay safe.

The great news about many of the steps here is that once they're done, they're done — you can stop worrying about them.

The best time to start is now, so let's begin...

As you're looking through the various steps keep an eye out for these handy icons to help guide you:



Priority steps that will help protect your place against more costly damage.



Steps that can be completed with some basic DIY skills.



Simple preparedness steps that can usually be completed in 30mins or less.

Above your home



Brick and concrete masonry chimneys

Look up at your roof. Is there a brick or concrete chimney that extends above the roofline? Thousands of these types of chimneys have collapsed in previous earthquakes, causing serious damage to homes and injuries to people.

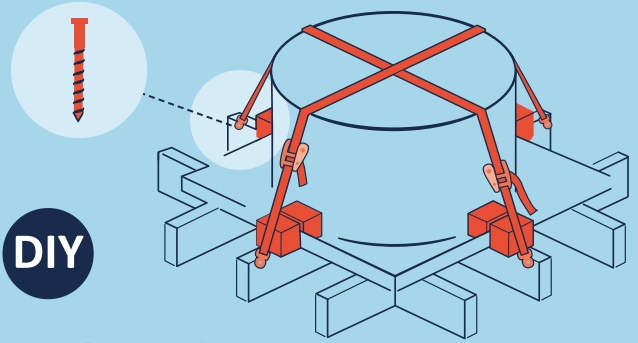
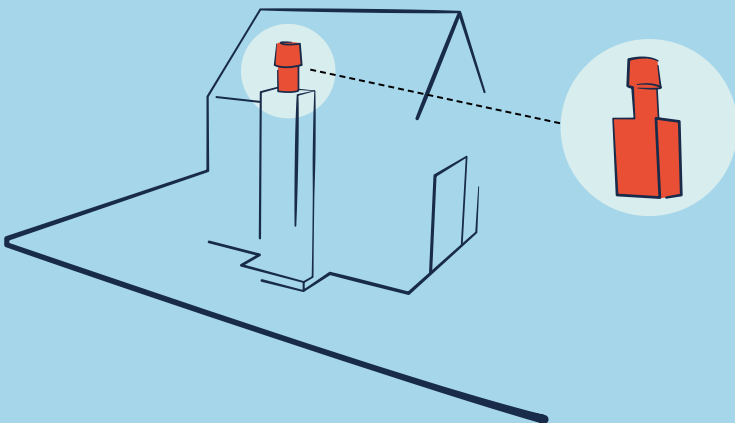
Brick and concrete chimneys without reinforcement are the greatest risk. It can be difficult to tell by your chimney's exterior if it's reinforced, but if your home was built before the 1970s, it's probably not.

Make them safer

- If your chimney is no longer in use, remove it.
- If you still use the chimney, replace the part that extends above the roofline with a lighter weight metal flue.
- If you have a character or heritage home, the chimney might be able to be replaced with a lighter weight 'lookalike'.

TIP

Most work with chimneys is best left to the professionals, so talk to a licensed building practitioner or your local council about what's involved in getting yours removed or replaced.



DIY

Header tanks

Even if they're no longer in use, header tanks can be dangerous in an earthquake if they fall through your ceiling, or off your roof. They pose an even bigger risk if they're full of water, so they need to be properly secured, or removed.

Make them safer

- Securely nail wooden blocks at four locations around the perimeter of the tank's tray and fit wooden blocks between the tray and the tank.
- Place tiedown straps across the tank to secure it to the roof framing.
- If your tank is in use, talk to a tradesperson about installing flexible fittings between your tank and its supply lines.
- If your header tank is no longer in use, it's best to safely remove it.

Heavy roofing materials

A single roof tile can weigh up to 4.5kg – that can do a fair amount of damage if it falls off or through your roof.

Make them safer

- Have heavy roofing materials, such as concrete or slate tiles, replaced with lighter weight options such as corrugated iron or metal tiles.
- Ensure that heavy roofing materials are well secured to the framing beneath. Tiles will usually be tied with wire to the framing, but other methods may be used. Fastenings should not be loose, rusted or broken.

Around your home



House walls

If your home was built before 1950 there's a chance any external brick (such as double brick) and concrete block masonry walls are not reinforced.

Houses built before the 1930s often have 'lath and plaster' wall linings which are not intended to provide bracing in an earthquake.

These wall types are at greater risk of being damaged in an earthquake.

Make them safer

- In most cases, you will need a licensed building practitioner to help you check your walls and carry out any strengthening or replacement work.

TIP

If possible, try to combine this work with other renovations or building work – this will save time and money.



Retaining walls

Retaining walls can crack, move or even collapse under the stresses of an earthquake.

Make them safer

- Check that retaining walls on your property are well constructed and maintained. Your local council may hold information about walls on your property file. Older walls could have been built before there were Building Code requirements and are likely to be less resilient.
- Monitoring and maintaining your retaining walls is important to reduce the risk of damage. Watch for any immediate signs of problems, including: cracks, bowing or bulging, roots penetrating or pushing the wall, and clogged or insufficient drainage holes (if it's a solid wall).
- If you want to improve an existing retaining wall, consider getting advice from an engineer and your local council.



External gas bottles

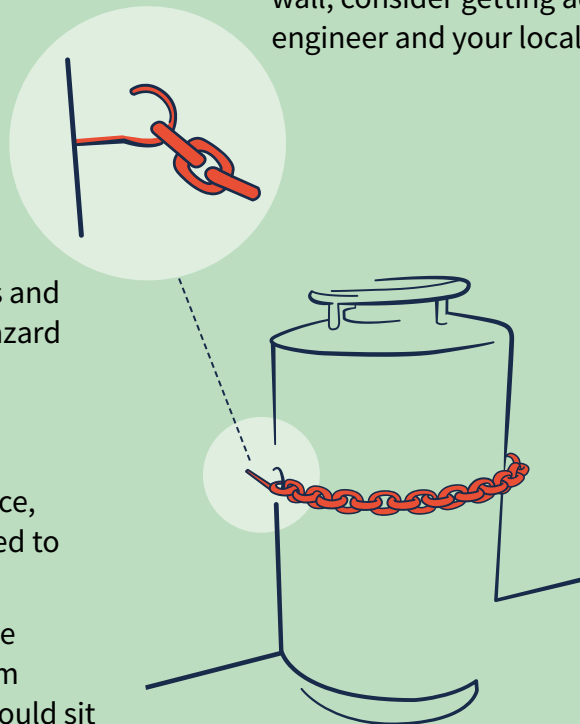
Shaking can loosen or break connections and cause gas leaks from the bottle – a big hazard following a quake.

Make them safer

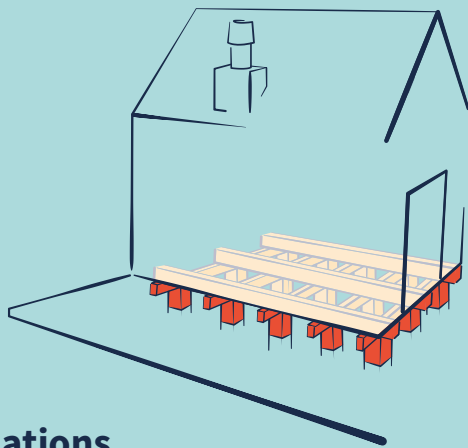
- Gas bottles should sit on a level surface, such as a concrete pad, and be secured to the house with a chain.
- The chain should be near the top if the bottom of the bottle is restrained from sliding on the ground, otherwise it should sit at about mid-height.

TIP

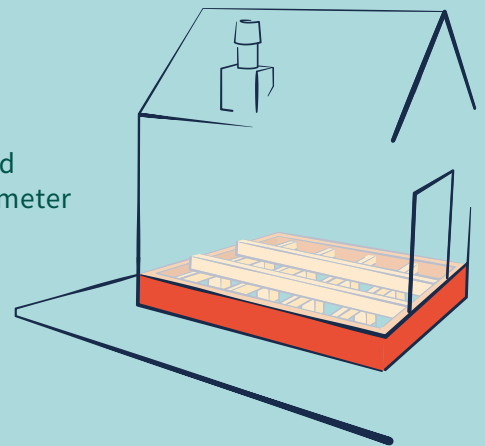
Make sure you know where your emergency cut-off switches and taps are for gas, power and water. Once mains gas has been turned off, you will need a professional to turn it back on.



Under your home



Pile foundation (left) and piles with concrete perimeter foundation (right)



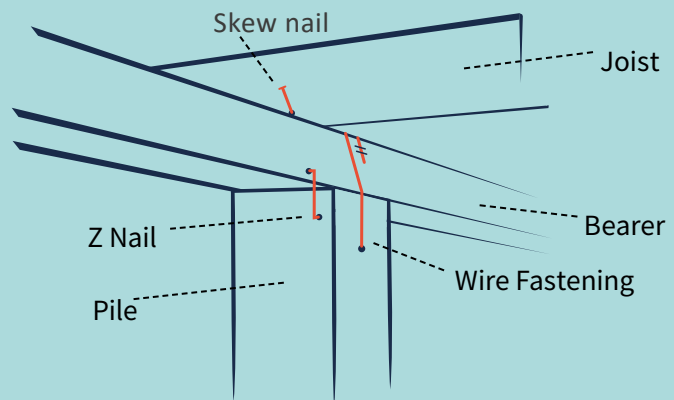
Foundations

Many New Zealand homes have suspended timber floor foundations, which have a crawl space (called a sub-floor) beneath the house.

In homes with this type of foundation it's important that foundations are properly braced and well connected to the house above – this will help minimise movement and damage.

Make them stronger

- Check that connections are in good condition (not loose, rusted, broken or missing) between the bearers and piles, and bearers and joists.
- If sufficient connections are not in place, wire, bolt or bracket connections should be used. A range of connection options are available from most hardware stores – some options are shown in the diagram to the right.
- Bracing provides support to foundations that will help prevent them tilting in an earthquake. Seek advice on bracing from a licensed building practitioner or engineer, particularly if your home has either a concrete perimeter foundation wall that is not continuous, or if the subfloor is more than 600mm above the ground.
- If any piles or pole foundations are showing signs of deterioration or rot, have them replaced.



Gas and plumbing fittings

The connection points of rigid gas and plumbing lines are at risk of being torn apart during earthquake shaking. The resulting leaks can cause a lot of damage to your property or injuries to people.

Make them safer

Have a tradesperson install flexible fittings between your appliances and their supply lines. These allow for extra movement and help prevent breaks and leakages.

TIP

Be sure to use fittings suitable for your house's environment. For example, any steel connections within 600mm of the cleared ground level need to be a minimum of type 304 stainless steel. If in doubt, ask a licensed building practitioner.

Inside your home

DIY

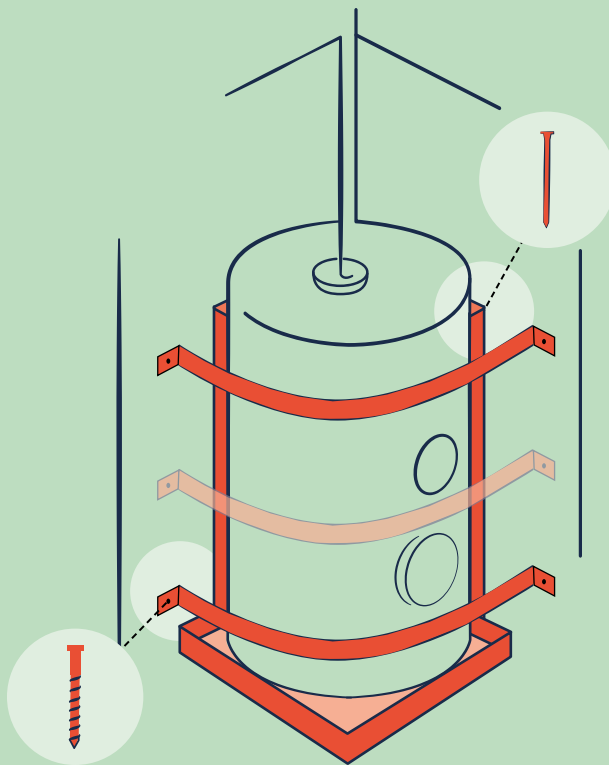


Hot water cylinders

If your hot water cylinder tips over it can cause a lot of damage due to its size and weight, or because of water and gas leaking from broken lines. All hot water cylinders should be secured for earthquakes. Thankfully, making them safer is pretty straightforward.

Make them safer

- Check your cylinder's size and design. Two steel restraining straps are needed for cylinders smaller than 200 litres, but larger cylinders will need three straps, or more. If straps cannot be placed within 100mm of the top or bottom edge of the cylinder, then additional straps will be required.
- Purchase a suitable seismic restraint kit from a hardware store. These have the straps, brackets, screws and washers you'll need.
- Install blocking. Even with strapping, a cylinder can still rock from side to side. To help prevent this, run two 50 x 50mm vertical blocks up the length of each side of the cylinder. These blocks should be fixed to wall framing using 100 x 3.75mm nails at 600mm centres maximum.



Solid fuel burners

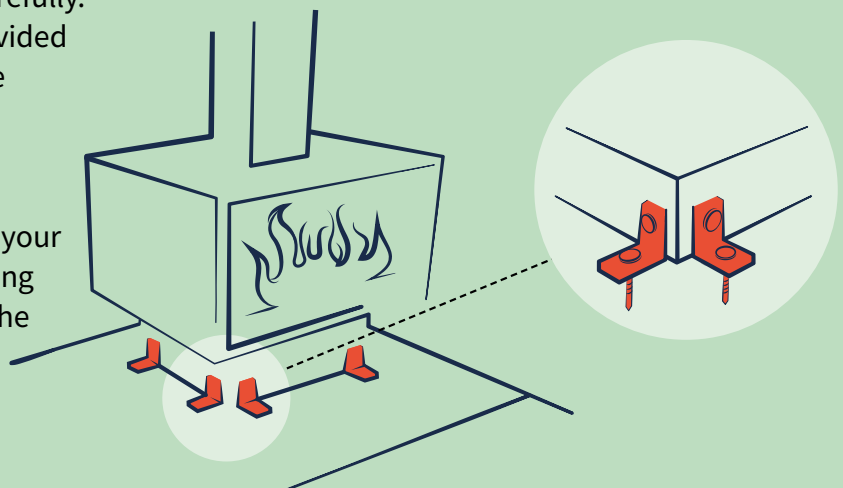
An unrestrained solid fuel burner can topple during a quake, posing a severe fire risk.

Make them safer

- When it's cool, try gently rocking the burner – if it moves then it's not correctly restrained.
- All burners should have restraint instructions. If you don't have these already, contact the manufacturer of your product for the specific information.
- Follow the restraint instructions carefully. If the burner has anchor points provided at its base the process is likely to be simpler.

TIP

If a burner is not correctly installed your insurance may not cover any resulting damage, so it's a great idea to use the services of a qualified technician.



DIY**QUICK
FIX**

Tall and heavy furniture

Tall and heavy furniture can move a lot during earthquake shaking and cause damage or injury when they topple over. It's important to secure these items as soon as you can.

If you're renting, your landlord should allow you to secure tall and heavy items to make them safer. Just make sure you discuss it with them first.

Make them safer

1. Mark the wall where the top of the furniture comes to, then move the furniture from the wall.
2. Find the studs in the wall by tapping lightly and listening for the duller sound of the stud. You could also use an electronic stud finder.
3. Use 63mm 12-gauge screws to screw metal angle brackets in place before moving the furniture back. To hide the brackets as much as possible, attach them as two upside Ls, with the bracket arm facing downward against the wall.
4. Screw the other arm of the bracket down onto the furniture with 15-25mm 8-gauge screws.

TIP

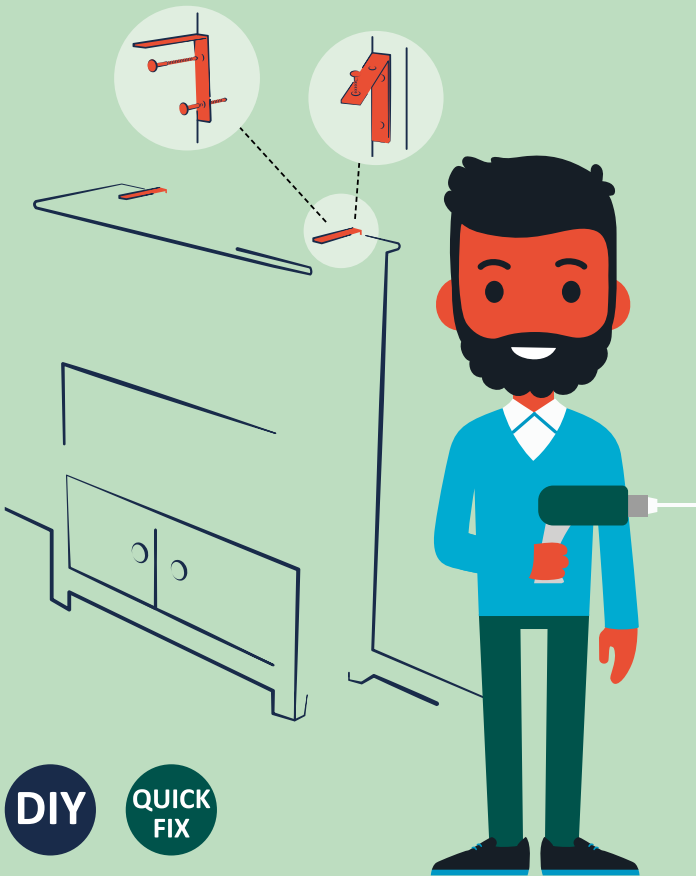
Specific restraint types are available for large kitchen appliances such as fridges, freezers and free-standing ovens. Ask at your local hardware store or check online.

Preparing when renting

Renting your home does make preparing for quakes more difficult, but there's still a lot you can do.

It's easiest to focus inside. Your landlord should allow you to take steps that will make items safer (such as securing heavy furniture to the wall), but you will need to return the wall to its original condition when you move out. Before you act, discuss what you'd like to do with your landlord or property manager.

Also talk to them about any larger items. They might not be aware of the risk posed by certain household features and fixing them will reduce the chance of damage to the property and injury to you.

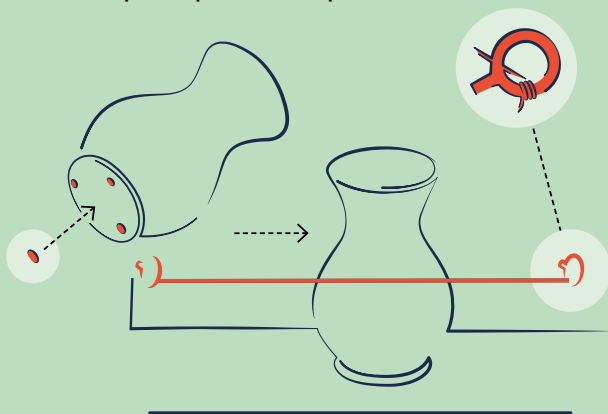
**DIY****QUICK
FIX**

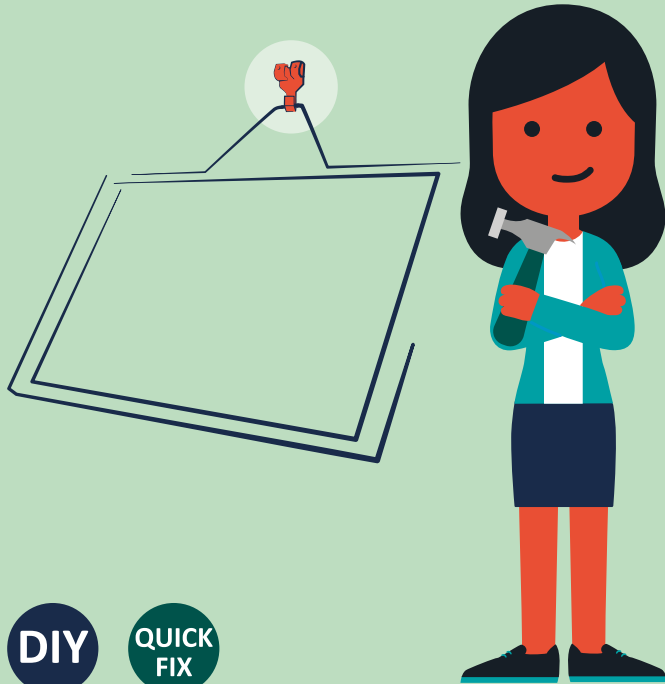
Items on shelves

Items on shelves can easily fall, even in smaller earthquakes. Take steps today to protect your valuables and save yourself the hassle of cleaning up a big mess.

Make them safer

- String cord, nylon or curtain wire in front of books and other items on a shelf to lessen the chances of them falling or flying off in a quake.
- Stick Blu Tack or Quake Wax to the base of fragile ornaments or precious objects to help keep them in place.



DIY**QUICK
FIX**

Picture frames and mirrors

Wire-hung picture frames can jump out of their hooks during earthquakes. It's important to use appropriate hooks for the size and weight of the item – that means no hanging items on single nails.

Make them safer

- Conventional single-nail picture hooks are fine for light pictures if the nail has been hammered into something solid, such as a wall stud.
- Anything a little heavier will need a two or three-nail picture hook, or possibly several hooks. Very heavy pictures or mirrors may need something even stronger. Also, don't forget to use strong cord, not light string.

TIP

Once you have nailed the hook into place, hang the picture and then pull it out so you can get your hand behind it and push the hook closed.

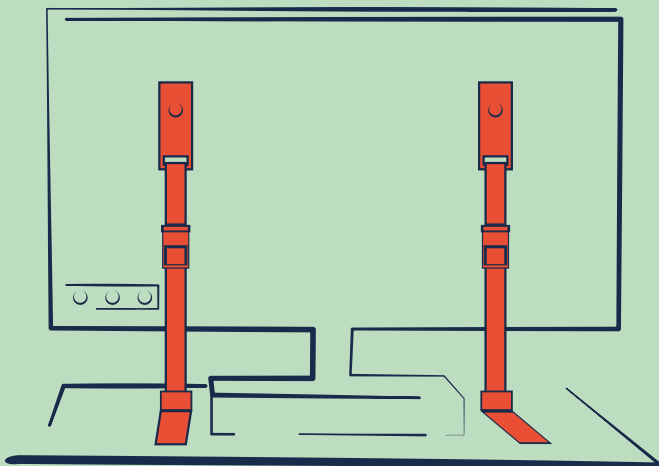
DIY**QUICK
FIX**

Televisions

Due to their tall and narrow shape, TVs are prone to toppling forward in a quake.

Make them safer

- Use specialist restraint straps to secure the TV to the furniture it sits on.
- A non-slip mat beneath the TV can also minimise movement, but these should be used in conjunction with restraints.

**DIY****QUICK
FIX**

The fast five

Five preparation steps that take five minutes or less!

- 1 Place a non-slip mat beneath a smaller household appliance (eg. a TV or microwave).
- 2 Stick Blu Tack or Quake Wax to a fragile ornament or precious object to help keep it in place.
- 3 Add a positive-catching latch to a cupboard door or drawer that holds fragile items. Make sure the latch isn't magnetic, as it will not hold during a quake. Child-proof latches with a mechanical action are best.
- 4 Move a heavy household item to a lower shelf or cupboard.
- 5 Replace a nail being used to hang a picture frame with an appropriately sized hook.

Six reasons to not prepare for quakes (and why you should anyway)

1

“My house has been in a decent quake before and came through fine. I’m sure it would be okay again.”

Why you should prepare anyway

If your home has been through a damaging quake it means you live in an active seismic area that will certainly experience another earthquake. And that next quake could affect your home in very different ways to previous events.

2

“I think it will be expensive.”

Why you should prepare anyway

Many of our preparedness steps don’t cost a lot of money to complete. Even bigger projects, such as removing chimneys, can often be completed more quickly and cheaply than many people expect.

3

“I’ve got insurance so even if my place is badly damaged I’m covered.”

Why you should prepare anyway

Having adequate insurance is super important, so well done! But one of the main impacts from having a damaged home is the inconvenience that follows. By taking preparedness steps now it will mean less disruption for you and your family, so you can get back on your feet more quickly.

4

“I don’t have time.”

Why you should prepare anyway

We know everyone is busy, but even taking some small steps can make a big difference in a quake. Do what you can today and use our checklist in this brochure to plan for other projects.

5

“I don’t live in an area that’s at risk of quake damage.”

Why you should prepare anyway

New Zealand sits astride two of the Earth’s major tectonic plates, so any part of the country could experience a damaging quake. Even if you’re not close to known fault lines, your home could be damaged from a large distant quake. So wherever you live it’s important to prepare.

6

“I have more important things to do than prepare for earthquakes.”

Why you should prepare anyway

The instant a damaging quake occurs your chance to prepare is over. The great thing about many of the steps in this brochure is that once they’re done, they’re done. So get started and feel great that you’ve done all you can!

After a natural hazard event

In the first few days after an earthquake, or other natural hazard event, it's important you put your emergency plan into action. Look after yourself, your family and help others if you can. Make sure that your home is safe, sanitary, secure and weathertight. Once that's all done, you can think about making a claim for damage to your home or land.

If you do suffer damage, here are some tips to help make the claims process as smooth as possible:

- If possible, take photos before you dispose of anything, and before and after completing any urgent repair work. Save these in the cloud or in another secure and easily accessible location.
- Make a list of each area or item you're photographing as you go around. This will help you identify the photos in the future and make sure you capture everything.

While ensuring your safety should always be the priority, it's a great idea to get your insurance claim in as soon as possible following the event. You have a maximum of two years to lodge a claim for damage. However, any delay beyond three months may affect the ability to assess your claim, and could result in your claim being declined.

We've partnered with most private insurers to assess, manage and settle natural hazards cover claims for damage on our behalf. They will be your central point of contact during the claims process and can answer any questions you have. You can usually make a claim with your insurer online or over the phone.

Is your insurance sorted?

Having insurance cover for your home and contents is really important to help you get back on your feet after a natural hazard event. Plus, having a private home insurance policy that includes fire cover (most do) means you automatically qualify for the NHC Toka Tū Ake insurance product, NHCover.

It's important to review your insurance regularly, so use an online calculator to check your home insurance cover is enough to rebuild your house if it's severely damaged, and that you have enough contents cover to replace any damaged possessions.*

Could your household get through on your own following a natural hazard event?

When an emergency happens, Civil Defence and emergency services will be busy helping the people who need them most. It's up to you to make sure your family, and the people you care about, know what to do and that you all have what you need to get through on your own.

Visit getready.govt.nz and follow the easy steps to make sure your household is ready.

* As at 1 July 2020, NHC Toka Tū Ake no longer provides cover for damage to contents.



Your Home Preparation Checklist

Above my home

- My tall brick or concrete chimney has been removed or replaced with a lighter weight option.
- My roof is made from lightweight materials (eg. corrugated iron) that are well secured to the framing.
- My heavy roofing material (eg. concrete or slate tiles) is well secured to the framing beneath.
- I have used strapping and bracing to secure water header tanks. Or, if the header tank isn't used, I have removed it.

Around my home

- I know my retaining walls are fit for purpose and in good condition.
- I have ensured that any large external gas bottles are secured with a chain.
- I know how to turn off my mains water and gas supplies in an emergency.

Under my home

- My home's foundations are properly connected to the house above (through the use of Z nails, wire, or appropriate brackets).
- I have sufficient bracing in place if I have pole foundations, or the distance between the ground and the floor space above is greater than 600mm.
- My foundations are in good condition.
- I have flexible fittings installed between gas and plumbed appliances and their supply lines.

Insurance

- I have purchased private insurance that will allow my house to be repaired or replaced in the event of damage from a natural hazard.
- I have purchased private insurance that will allow my household contents to be replaced should they be lost in a natural hazard.

- I have visited www.knowyourcover.co.nz to understand more about my natural hazards insurance cover and its limits.
- I know any exclusions (damage that wouldn't be covered) from a natural hazard event.

Inside my home

- I have used brackets to secure tall and heavy furniture (eg. fridges and bookcases) to the walls.
- I have used strapping and bracing to secure my hot water cylinder.
- My solid fuel burner is secured according to the manufacturer's instructions.
- I have moved heavy household items to lower cupboards or shelves.
- I have latches or locks on cupboards to help ensure items don't fall out and break.
- I have strung cord across the front of shelves to help items stay in place.
- I have used Blu Tack or Quake Wax to secure fragile items such as vases and other valuables.
- I have used appropriate hooks to hang picture frames and mirrors so they won't fall.
- I have used restraint straps and non-slip mats to stop smaller appliances (eg. TVs, microwaves) from falling or moving.

The top five things I want to Fix and Fasten are:

1

2

3

4

5
