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LICENSED BUILDING PRACTITIONERS skills MAINTENANCE C CARPENTRY F FOUNDATIONS

Jack and pack correctly

Many house foundations in Canterbury have been repaired using the jack and pack repair method. Here are some of the key points you need to know when using this method.

IN MID-2015, the Ministry of Business, Innovation and Employment (MBIE) carried out a survey of earthquake-damaged and repaired homes in Canterbury. While the topic was earthquake repairs, the information is useful for anyone undertaking foundation repairs. Here, we focus on the jack and pack method.

Decide whether to repair or replace

The first step is to assess whether to repair the damaged section of the foundations or replace it. This will depend on the extent of the damage. For example, if you are:

- relevelling a timber framed floor by more than 100 mm, the subfloor may need to be rebuilt rather than repaired
- assessing a pile that is more than 15 mm out of plumb in 1 m of height, you should look at replacing it
- going to relevel a concrete slab foundation and it is more than 150 mm out of level, a rebuild is the suggested option.

Is a building consent needed?

A significant repair to the structure (including the foundation) of a home will likely need a building consent.

A minor repair to a few piles might not need one, but it pays to check with the local building consent authority or read MBIE's guidance on Schedule 1 of the Building Act on www.building.govt.nz. This guidance document will tell you what building work does not require a building consent.

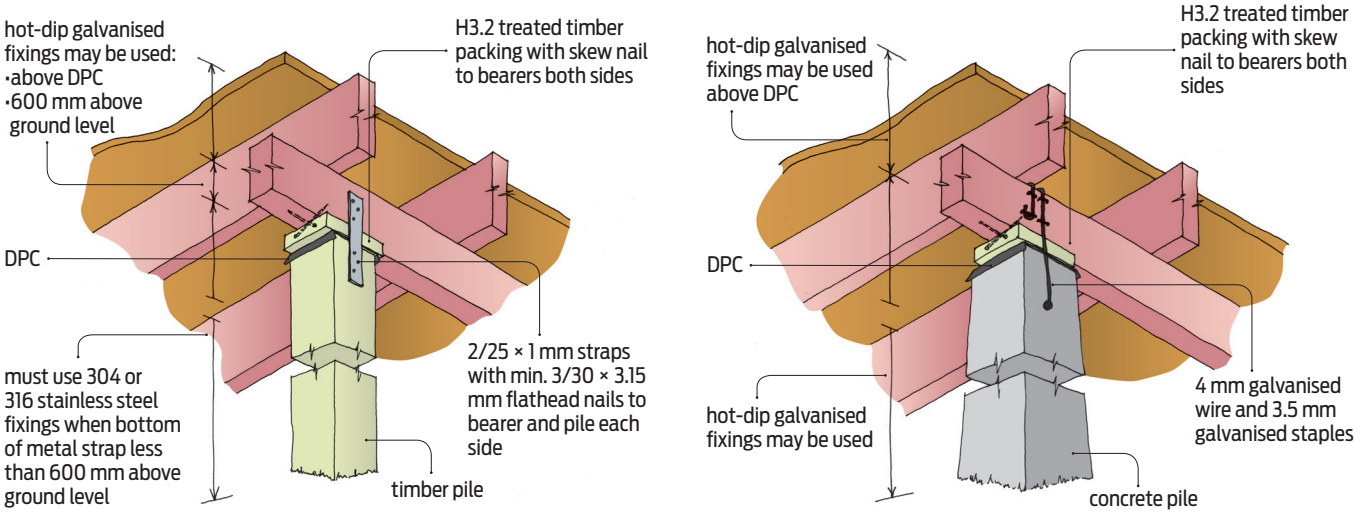

Figure 1: Jack and pack repair – timber pile (left) and concrete pile (right).

Steps to doing the job

The general steps to relevelling include:

- making the area safe and ready for the work
- identifying the relevelling heights
- detaching the connections and services from the subfloor
- applying the relevelling methodology
- reattaching connections and services
- reinstating disturbed ground and tidy up.

For a jack and pack repair on a timber subfloor, if you are lifting the bearers to pack them up, a single H3.2 treated timber packer or folding wedges fixed in place are suggested.

Remember, if you need to pack a pile more than 100 mm, you should replace the pile instead. You should also replace piles that are out of alignment or are leaning too far over.

After you have packed the piles, make sure that the pile, packer and bearer are aligned and fixed together well (see Figure 1).

Ask for advice

If you are unsure of the methodology or whether the work should have a building consent, it is a good idea to speak to the local building consent authority. For expert advice you could consult an engineer, or direct the homeowner to get advice.

For more MBIE has put out guidance documents for the repair and replacement of residential foundations, including a video. See building.govt.nz.

Quiz

1. How far out of plumb would a pile need to be before you should replace it?
   a. 10 mm per metre.
   b. 15 mm per metre.
   c. 20 mm per metre.
   d. Never replace a pile.
2. I want to pack only one pile in my repair. How much can I pack it without needing to replace it?
   a. 50 mm.
   b. 75 mm.
   c. 100 mm.
   d. 200 mm.
3. What does Schedule 1 of the Building Act tell you?
   a. How much you can pack your pile.
   b. What building work is restricted building work.
   c. What building work does not require a building consent.
4. Where can I get more information about repairing and relevelling foundations?
   a. The local council.
   b. The Building Performance website (www.building.govt.nz).
   c. MBIE's guidance documents.
   d. All of the above.

Answers: 1. b 2. c 3. c 4. d