



## House condition

The Pilot Housing Survey trialled a new approach to collecting data about the condition of New Zealand's housing stock. Trained assessors visited 832 houses, recording information on physical characteristics such as insulation, heating, the presence of mould and general condition. Results show that, on average, rental houses are in poorer overall condition than owner-occupied houses and have a greater presence of visible mould.

In 2018/19, BRANZ partnered with Stats NZ to develop the Pilot Housing Survey (PHS), receiving co-funding support from the Ministry of Business, Innovation and Employment. Survey participants were recruited through the Stats NZ 2018 General Social Survey. The PHS was conducted from August 2018 to May 2019.

This Research Now covers findings on house condition. For findings around thermal insulation and energy efficiency, see BRANZ Research Now: Pilot Housing Survey #3 *Insulation, ventilation, space heating and water heating*. For information about the survey itself, see BRANZ Research Now: *Pilot Housing Survey #1 Survey methodology*.

### EXTERIOR CONDITION

Condition was assessed based on the extent and severity of defects from a list. Condition could be rated excellent, good, average, poor or serious.

#### Roof materials, defects and condition

Painted steel was the most common roofing followed by coil-coated steel, although this was more common on owner-occupied dwellings. Concrete tiles were the second most common roof type on rental stock.

In 47% of houses, the roof was in excellent or good condition (Figure 1), while in 11%, it was poor or serious. The roof was more likely

to be in better condition for owner-occupied dwellings. One-fifth of dwellings surveyed showed signs of loose fixings/ridging/flashing issues (21%) and cracked tiles/holes/rust (19%).

#### Wall cladding materials, defects and condition

Timber weatherboard was the most common wall cladding type, present on nearly 39% of all houses, followed by brick (33%) and fibre-cement weatherboard (21%).

Around two in five houses (42%) showed signs of holes/cracks/gaps in the wall cladding, and 40% had deteriorating paintwork, while a similar proportion (41%) showed no signs of these defects.

The wall cladding was in excellent or good condition on 47% of houses (Figure 2). Nearly one in five houses had cladding in poor or serious condition. Owner-occupied dwellings were more likely to have cladding in excellent or good condition. This is consistent with the 2015 BRANZ House Condition Survey (HCS).

### Windows and exterior doors

Timber window/door framing was present in 42% of houses and the predominant frame type in 32%. Aluminium framing was present in 80% of houses and the predominant framing type for 68%.

76% of dwellings were entirely single glazed. Double glazing is increasing, however - in the 2015 BRANZ HCS, 10% of houses surveyed were entirely double glazed compared to 16% in this survey. Almost twice the proportion of owner-occupied dwellings were fully double glazed compared to rentals.

The most common defect in windows and exterior doors was seal decay/cracked or missing putty, evident in 45% of rentals and 29% of owner-occupied houses (Figure 3). In rental homes, 25% had windows/exterior doors that were ill-fitting or warped compared to 13% of owner-occupied houses.

While 58% of owner-occupied dwellings had windows and exterior doors in excellent or good overall condition, this applied to 38% of rentals.

The PHS trialled a new question to assess draughts, using both prevalence and size of gaps around windows and exterior doors as an indication of draughtiness (Table 1 and Figure 4). The results need to be treated with caution as draughts can be hard to assess - more noticeable on cold windy days than calm warm days. However, the results show some correlation with window and exterior door defects and condition. 76% of houses with windows and exterior doors in good or excellent condition had no visible gaps, while 71% of houses with windows and exterior doors in poor or serious condition had moderate-large/some-many visible gaps.

Gaps around windows and doors were more common in rental homes - 19% of owner-occupied and 31% of rental dwellings had moderate or large gaps (or some or many) around windows and doors, while 55% of owned and 36% of rentals had no visible gaps.

The healthy homes standards that come into force on 1 July 2021 for privately owned rental homes and boarding houses have a required standard for draught-stopping:

“Landlords must stop any unnecessary gaps or holes in walls, ceilings, windows, floors, and doors that cause noticeable draughts. All unused chimneys and fireplaces must be blocked.”

### Drainage

Two-thirds of houses (67%) had no visible

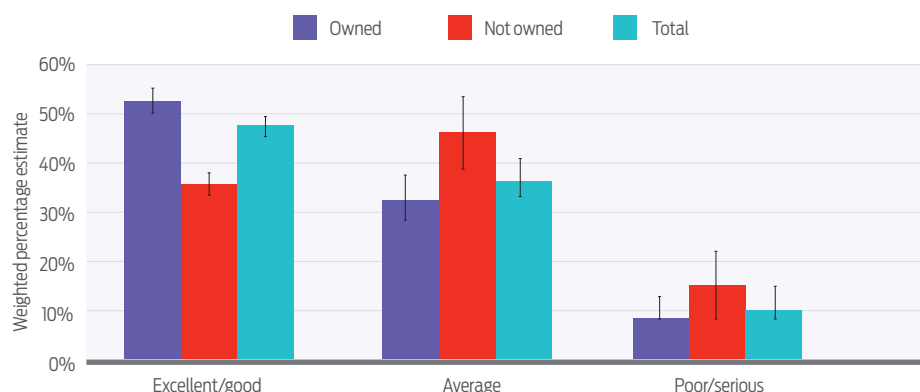


Figure 1 Roof condition by tenure and overall

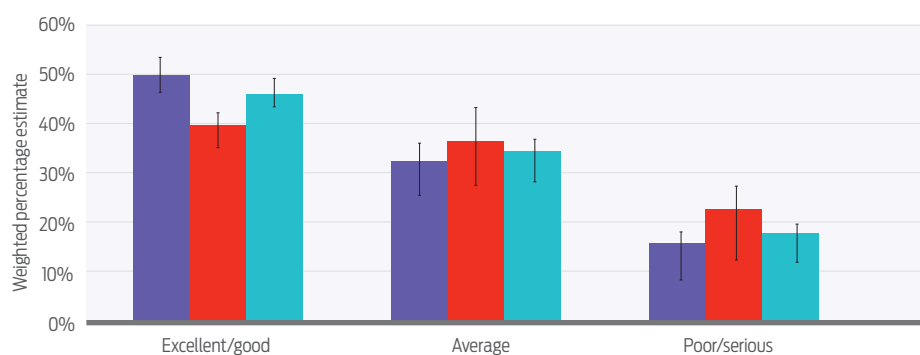


Figure 2 Condition of wall cladding by tenure and overall

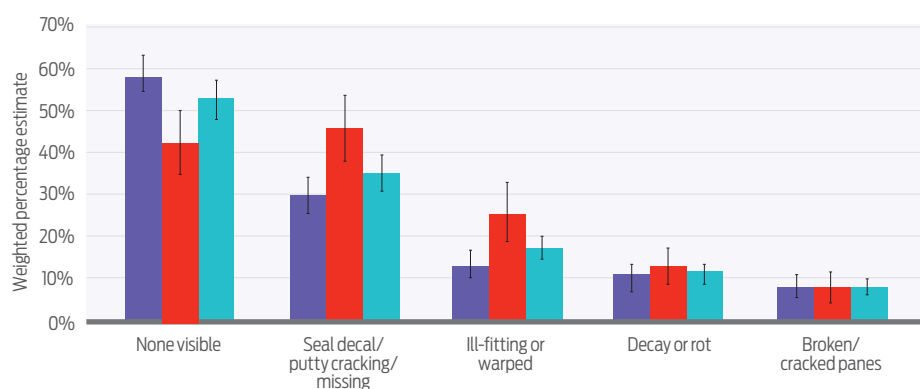


Figure 3 Defects in windows/exterior doors

Table 1 Draught assessment criteria used in PHS

CONDITION	DESCRIPTION AND ASSESSMENT CRITERIA
No visible gaps	All main doors and windows intact and close tightly
Small/few visible gaps	Gaps affect up to 1 door and 2 windows. Gap(s) 3–15 mm under door, 3–10 mm and >50 mm long around doors/windows with no draught-stopping in place.
Moderate/some visible gaps	Gaps affect 2 doors and 5 windows. Gap(s) 3–15 mm under door, 3–10 mm and >50 mm long around doors/windows with no draught-stopping in place.
Large/many visible gaps	Gaps affect >2 doors and >5 windows. Gap(s) 3–15 mm under door, 3–10 mm and >50 mm long around doors/windows with no draught-stopping in place.

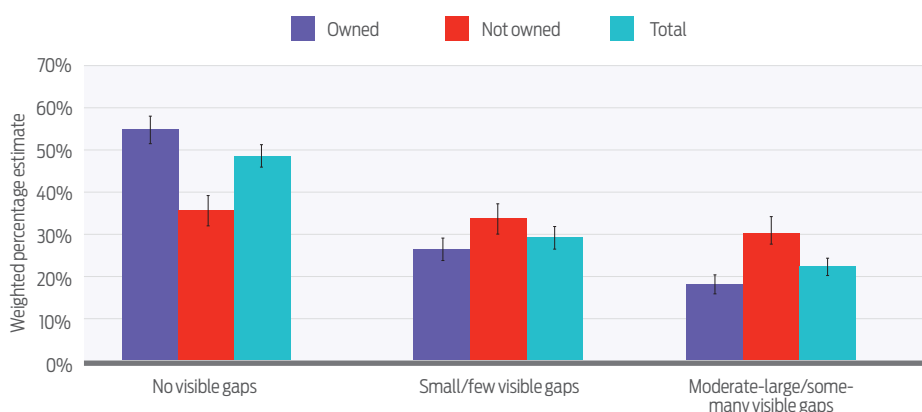


Figure 4 Presence of visible gaps and condition of windows and exterior doors

defects with guttering or downpipes, while 21% had signs of holes, broken or missing parts. Blocked guttering was more common in rented dwellings (17%) compared to owner-occupied dwellings (9%).

### Subfloor ventilation and ground moisture barriers

The ground under a 100 m<sup>2</sup> house has the potential to release an average of 40 litres of moisture per day. Installing a ground cover has been shown to be an effective way to control this.

Of the houses with a subfloor cavity (61% of the total), 17% had a ground moisture barrier. In 11% of cases, it was not possible to tell, due to access/visibility restrictions. This suggests around 73% of houses with a subfloor could benefit from a ground moisture barrier (44% of the total). There was no significant difference between owned and rented stock. Most of the subfloors without a ground moisture barrier could be considered enclosed (neither open, trellis nor baseboards with continuous gaps).

Assessors looked for evidence of ponding under houses, a potential sign of poor drainage. Around half (47%) of the houses with a subfloor were dry at the time of the survey, while around 35% were damp or showed signs of ponding (the vast majority being damp). While the weather at the time of the assessment could affect the conditions seen, signs of ponding at any time indicate poor drainage or leaks.

The healthy homes standards also have a required standard on moisture ingress and drainage:

“Landlords must ensure efficient drainage and guttering, downpipes and drains. If a rental property has an enclosed subfloor, it must have a ground moisture barrier if it’s possible to install one.”

### Foundations

Where accessible, the condition of foundations was assessed from the access hatch. Nearly two-fifths of houses had a concrete slab or another dwelling below, so this data applies to only 533 of the 832 surveyed dwellings. Of those with a subfloor (61% of the weighted sample), 23% had a least one defect, which includes:

- poor fixing of piles
- rot/borer
- structural cracks
- missing/leaning/displaced piles.

Poor fixing was the most common, identified in 16% of homes with a subfloor cavity, followed by rot/borer (6%). In 16% of houses, the assessor was unable to assess foundation condition due to poor visibility from the access hatch.

### Access

Potential hazards with paths and steps include:

- slippery, uneven, cracked surfaces
- step risers or treads too high or insufficient depth or varying heights/depths
- unsafe step structure
- inadequate or missing handrails.

The results show no difference between owner-occupied and rented dwellings. Over half of houses had none of the listed hazards (56%). The most common hazard was a slippery or uneven surface, affecting around one-fifth of dwellings.

### INTERIOR CONDITION

The interior of each dwelling was assessed on condition and the presence of visible mould. As with the exterior, a rating scale was used on the presence/severity of defects.

While the condition and presence of mould was assessed in all rooms individually, results

have been combined for rooms of the same type. This means that, where more than one room of that type (such as living room or bedroom or bathroom) was present in the dwelling, the worst rating for a room of that type has been used.

### Room linings

The interiors of rental dwellings were consistently in poorer repair than owner-occupied homes. Overall, kitchen linings were in better condition than bedroom linings – 2 in 3 dwellings had kitchen linings in good/excellent condition compared to 2 in 5 for bedroom linings.

### Presence of mould

Visible mould was assessed on a scale from none to large or extensive (Figure 5). All surfaces were considered, including windows and curtains. To align with 2018 Census questions on mould, the moderate category was described as roughly equivalent to the size of an A4 piece of paper.

- **Bathrooms:** 57% of bathrooms showed signs of mould, 28% moderate or worse. Mould in bathrooms was more common in rentals, with 41% having moderate or worse mould compared to 22% of owner-occupied dwellings.
- **Kitchens:** 28% of kitchens showed signs of mould, 14% moderate or worse. Mould was more common in kitchens of rented dwellings, 24% moderate or worse compared to 8% of owner-occupied dwellings.
- **Living areas:** Mould was seen in the living area(s) in 37% of houses, 19% being moderate or worse. Moderate or worse mould was observed in the living area(s) in 13% of owner-occupied houses and 29% of rentals.
- **Bedrooms:** Moderate or worse mould was seen in at least one bedroom in 48% of rentals and 29% of owner-occupied dwellings. Overall, 54% of houses had signs of mould in bedroom(s), with 35% moderate or worse.

Two-fifths (41%) of houses had no visible mould in any living area, bedroom or hallway. Around half (51%) of rental dwellings had moderate or worse mould in the living area/bedroom(s)/hallway compared to 30% of owner-occupied dwellings.

### Roof space

The predefined list of potential defects in

the roof space included signs of leaks/gaps/holes/rot/damp/mould/borer/pests, damaged wiring, missing or damaged underlay, structural/framing defects, ventilation ducting damaged/disconnected, header tanks leaking/unrestrained/with no lid.

This assessment applied to 82% of the sample. Of remaining houses, there was no roof cavity, poor visibility from the access hatch or no access.

In half of the houses, at least one defect was identified. The most common related to underlay - 10% missing or damaged and 11% with signs of gaps, holes or leaks. Exposed roofing was more commonly observed in rental dwellings (27% compared to 15% of owner-occupied houses). However, this may relate, at least in part, to roof material types and building practices. For example, concrete tile roofs were not always installed with underlay, and this roofing was more common in the rental stock surveyed.

### Opportunities for improvement

The pilot survey supported earlier BRANZ House Condition Surveys which found that, on average, rental houses are in poorer overall condition than owner-occupied houses. In particular, rental houses are more likely to have:

- moderate or worse visible mould present
  - ill-fitting/warped windows or exterior doors
  - gaps around windows and exterior doors.
- These conditions have significant implications for the health, wellbeing and comfort of the occupants and the energy efficiency and durability of the houses.

Owned Not owned Total

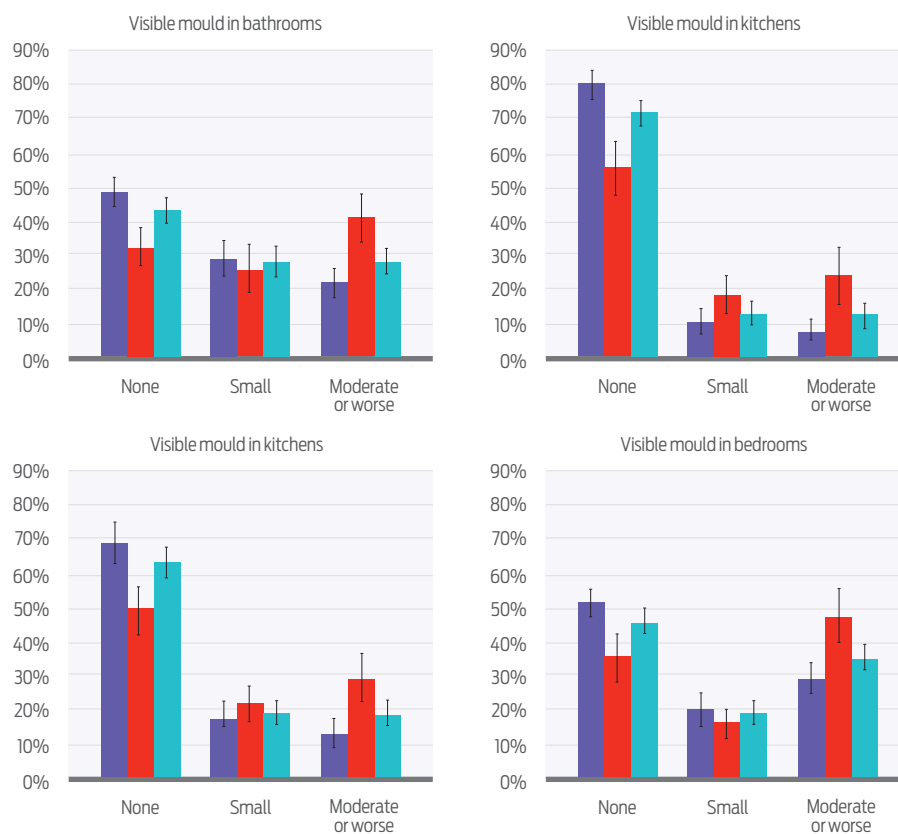


Figure 5 Extent of visible mould in living rooms and bedrooms

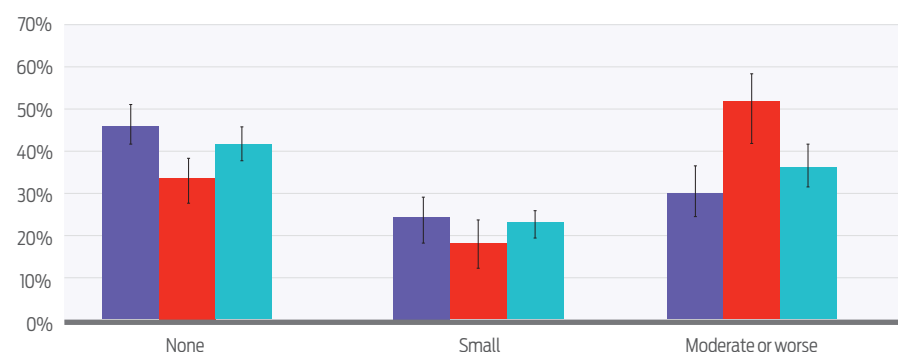


Figure 6 Worst case of visible mould recorded in any living space

## More information

Pilot Housing Survey #1 *Survey Methodology*  
Pilot Housing Survey #3 *Insulation, ventilation space heating and water heating*

### BRANZ study reports

These can be downloaded from  
[www.branz.co.nz](http://www.branz.co.nz)

SR456 *Assessing the condition of New Zealand housing: Survey methods and findings* (2020)  
SR370 *BRANZ 2015 House Condition Survey*:

*Comparison of house condition by tenure* (2017)  
SR372 *Warm, dry, healthy? Insights from the 2015 House Condition Survey* (2017)

### BRANZ websites

[www.branz.co.nz/healthy-homes-research/hcs/](http://www.branz.co.nz/healthy-homes-research/hcs/)  
[www.level.org.nz](http://www.level.org.nz)  
[www.renovate.org.nz](http://www.renovate.org.nz)

### Stats NZ website

[www.stats.govt.nz/information-releases/wellbeing-statistics-2018](http://www.stats.govt.nz/information-releases/wellbeing-statistics-2018)

[www.stats.govt.nz/integrated-data/apply-to-use-microdata-for-research/](http://www.stats.govt.nz/integrated-data/apply-to-use-microdata-for-research/)  
[www.stats.govt.nz/reports/housing-in-aotearoa-2020](http://www.stats.govt.nz/reports/housing-in-aotearoa-2020)

### Healthy homes standards

[www.hud.govt.nz/residential-housing/healthy-rental-homes/healthy-homes-standards/](http://www.hud.govt.nz/residential-housing/healthy-rental-homes/healthy-homes-standards/)