Study Report SR465 [2022]

Physical characteristics of new houses 2020

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Preface

This is the 10th annual report providing the results of the BRANZ New Dwellings Survey. BRANZ surveys builders of new dwellings on the physical characteristics of their buildings. The purpose is to obtain data on new housing that is not available from official sources. This data includes generic types of materials used by building components as well as design information such as number of floors, prefabrication and efficiency measures. The data is useful for studies in the fields of sustainability, energy efficiency, durability and engineering.

Acknowledgements

We would like to thank all of the builders and designers who filled in the survey form and returned it to BRANZ.

Physical characteristics of new houses 2020

BRANZ Study Report SR465

Authors

Claire Clarke and Orin Lockyer

Reference

Clarke, C, & Lockyer, O. (2022). *Physical characteristics of new houses 2020*. BRANZ Study Report SR465. Judgeford, New Zealand: BRANZ Ltd.

Abstract

Official data on the characteristics of new housing is very limited. Building consents data held by Statistics New Zealand gives numbers by building type, value and floor area, aggregated into territorial authorities. However, there is no data on materials used or housing characteristics beyond the floor area.

The BRANZ New Dwellings Survey dates to 1998 and is responsible for collecting data on materials used in new housing. We have since compiled a database of approximately 1,200 new houses per year containing information on the materials used by building component and design arrangements.

This report contains the results of those surveys on the materials used in new housing. It updates previous data with the inclusion of the 2020 data set. The aim is to provide information useful to building material manufacturers, retailers/wholesalers, builders, designers, researchers and government officials.

Keywords

Materials, building envelope, claddings, floors, framing, insulation.

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1. Introduction

BRANZ surveys 5,000 new residential buildings per year in the BRANZ New Dwellings Survey. This survey series started in 1998 and collects a variety of data on materials used in new housing.

The survey is a postal survey sent to the builder or designer identified on the building consent application form, and the questions relate to each individual consent. Generally, over 1,200 returns are received each year. An incentive is offered (a Lotto ticket, book voucher or reduced price on BRANZ publications) for the return of each survey form.

The consent information is obtained from the Whats On[1] building consent data. BRANZ uses this to determine a sample of new dwellings for each period from 31 territorial authorities. The territorial authorities surveyed are:

Auckland	Christchurch	Dunedin	Franklin
Far North	Gisborne	Hutt City	Hamilton
Invercargill	Kapiti	Manukau	Marlborough
Napier	New Plymouth	North Shore	Porirua
Palmerston North	Queenstown	Rodney	Southland
Tauranga	Thames-Coromandel	Tasman	Waikato
Waipa	Wellington	Western Bay of Plenty	Whangarei
Waitakere			

The survey form is constantly evolving to include new questions as required. However, it is important for BRANZ to keep the survey form as simple, concise and clear as possible. Therefore, BRANZ keeps the survey form to a single page.

BRANZ weights the responses by share of building activity in each territorial authority (as indicated by building consents) in the calculation of the national market share. This prevents some territorial authorities from having a disproportionate share of the total market share should BRANZ receive a larger number of survey returns from one particular area. The results presented are only for new houses (i.e. single detached units). Using the data collected, representative estimates of the incidence and proportions of many different materials can be made. The components analysed are:

- roof claddings
- wall claddings
- wall framing
- number of storeys
- flooring
- floor joists
- insulation.

[1] *Whats On report (Monthly).* BCI New Zealand, Auckland, New Zealand.

A limitation of the survey is that it does not ask why certain materials are selected. This means that the report contains no commentary on why material trends might be changing. It is also subject to sampling noise, which can cause short-term fluctuations that are at variance to long-term trends.

The average floor areas since 2007 are presented in Figure 1 to illustrate any bias that may be present in the results. The sample average floor area for 2020 is much lower than the consent average floor area.

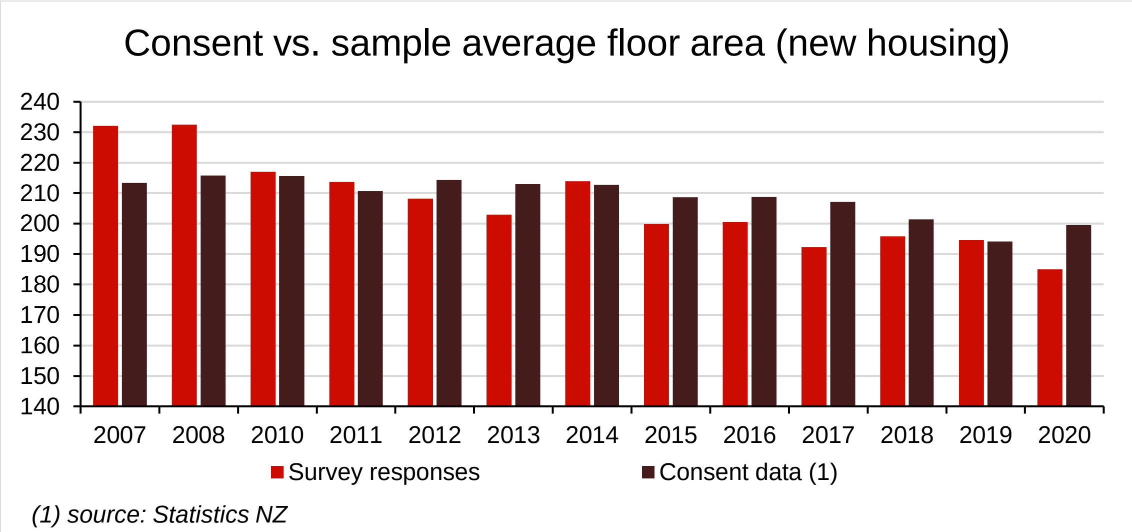

Figure 1. Consent versus sample average floor area.

Some questions change from survey to survey. However, most have remained the same since the start to ensure a consistent data set for comparative purposes.

2. Summary

In general, many of the market shares of materials have been relatively steady over the years surveyed. Notable material trends include the following:

- Steel roofing remains dominant and has held a similar amount of market share over the past 3 years.
- Weatherboard profiles remain the most common wall cladding, having overtaken bricks in 2016. However, the ‘other’ category (aerated concrete, FC sheet, plywood, EIFS, stucco, sheet steel etc) has steadily climbed from 2016 and is only just below weatherboard profiles.
- Timber framing continues to hold a high market share, within which laminated veneer lumber (LVL) continues to grow.

3. Main results

Key results are shown in the following charts. The data for these charts is in the tables in Appendix B.

3.1 Roof claddings

Sheet metal is the dominant roof cladding material with its market share trending upwards since 2012. It experienced a noticeable change in 2018, which has been maintained in 2019 and 2020 (Figure 2).

The share of tiles (both metal and concrete) has had a small bounce back in 2020 while the 'other' category decreased to the lowest score since the survey began. The 'other' category mostly consists of shingle and membrane roofing products.

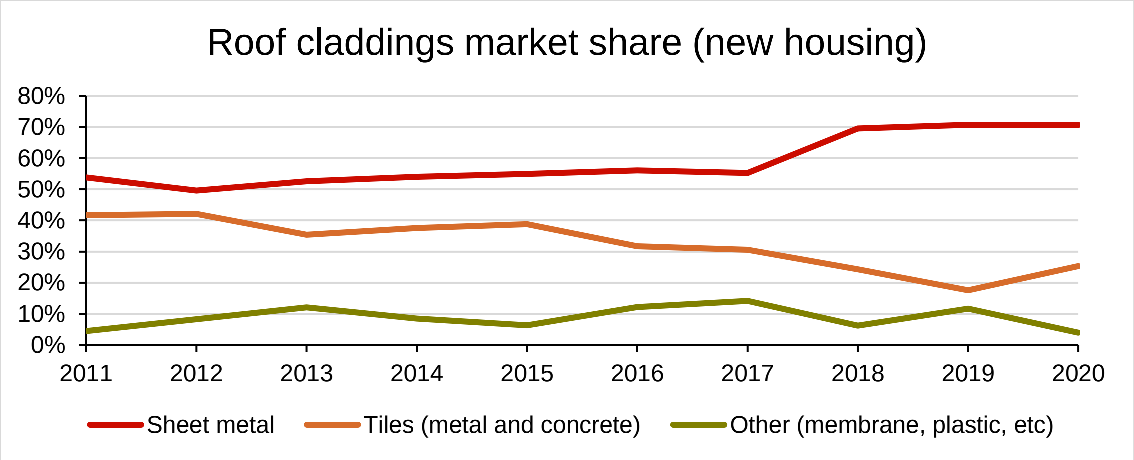

Figure 2. Roof claddings market share.

3.2 Wall claddings

Finish bricks (both clay and concrete) continued their decline in share (Figure 3), slipping below the 'other' category in 2018, after falling behind timber weatherboards in 2016. Overall, this is a staggering decline, with finish bricks having dropped from a market share of 46.6% in 2013 down to only 22.2% of the total market share in just 7 years.

Weatherboard profiles remain the most common wall cladding with a 42% market share, three-quarters of which are timber, with the remainder consisting of fibre-cement and uPVC.

Major constituents of the 'other' category are metal, non-weatherboard fibre-cement, exterior insulation and finish systems (EIFS) and aerated autoclaved concrete (AAC).

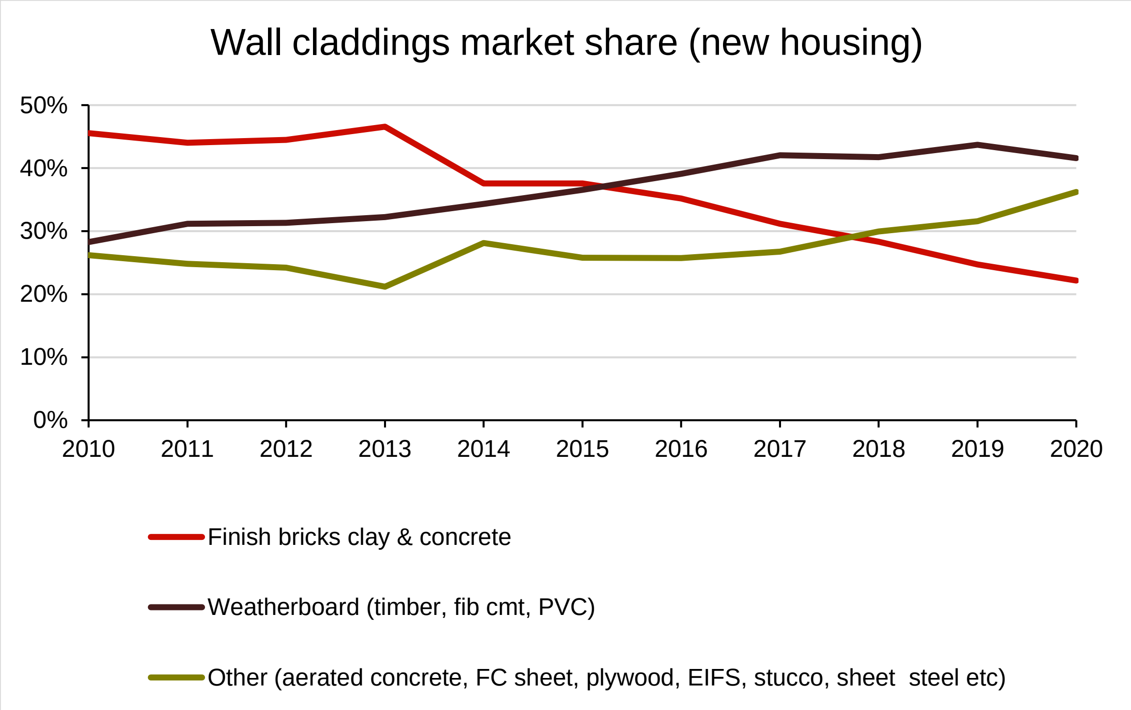

Figure 3. Wall claddings market share.

3.3 Wall framing

Timber framing remains the predominant structural material in new housing, with a historical market share of around 90% (Figure 4). This has eased slightly downwards over the past 7 years due to an increase in the use of concrete masonry, particularly for ground floors. LVL use has been growing and now comprises around 12% of timber framing.

The majority (91%) of wall framing is precut or prenailed, which has started to dip after holding relatively steady over the past 5 years.

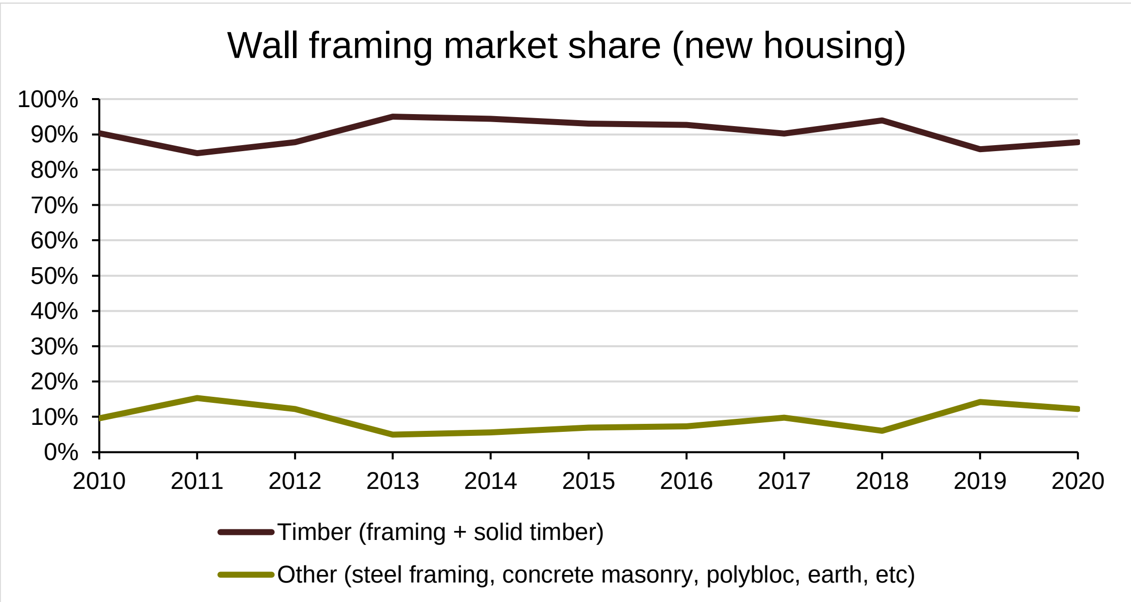

Figure 4. Wall framing market share.

3.4 Number of storeys

Figure z5 shows the proportion of new houses that were single storey, 2 storey or 3 or more storeys. Analysis was restricted to the 29 territorial authorities where we received four or more responses. The number in brackets beside the name of the territorial authority is the number of responses received. Notably, the greatest proportion of new houses built with 2 or more storeys were generally reported in areas with the higher land prices, such as Central Auckland, North Shore and Wellington. This reflects that higher land prices encourage greater intensity of development. Steeper terrain may also encourage multi-storey development – for example, in the case of Wellington.

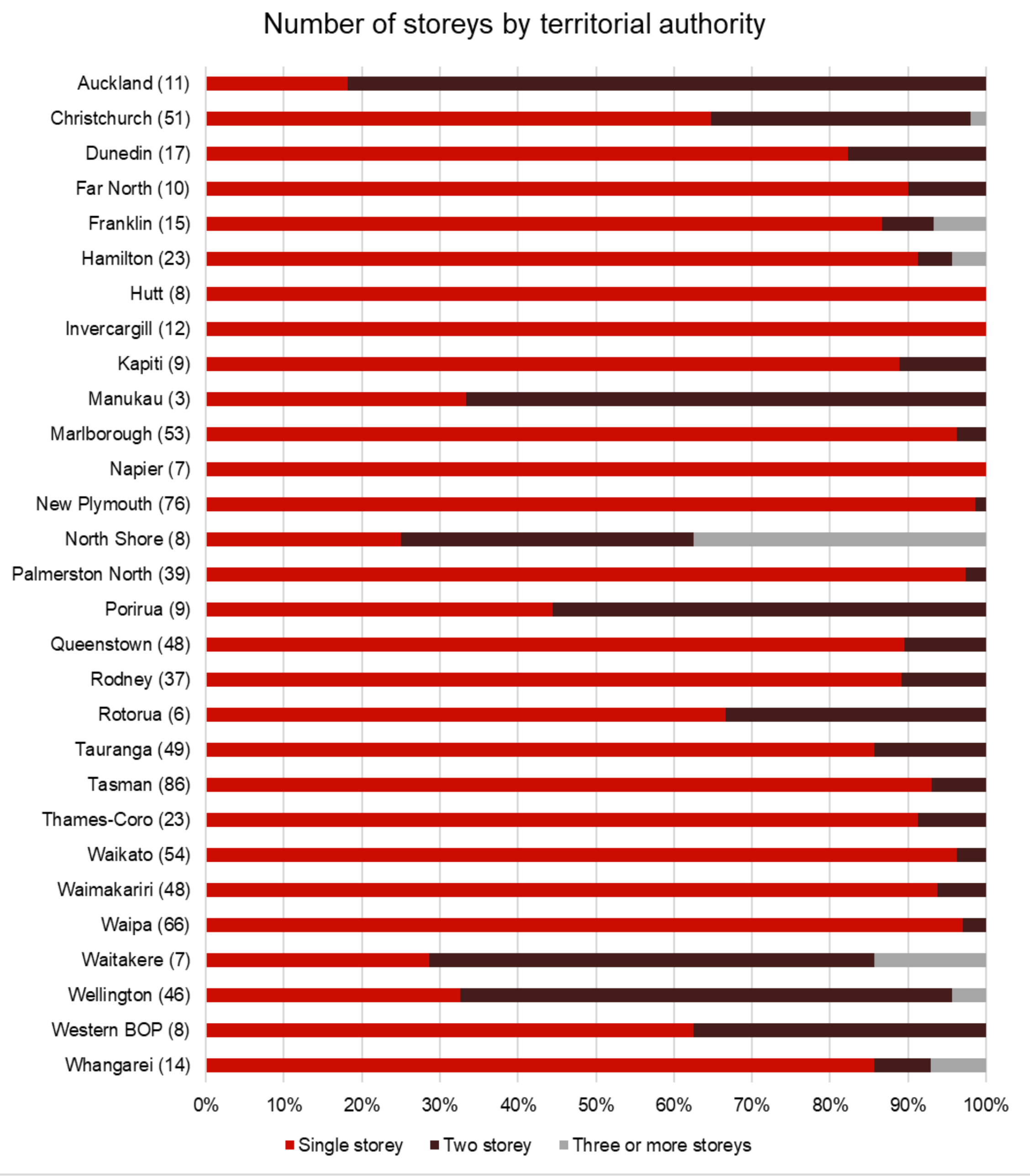

Figure z5. Number of storeys by territorial authority.

3.5 Flooring

Concrete flooring has had a slight uptick in 2020, while 'all other flooring' had a slight decrease for the first time since 2016 with 33% of the market share in new housing (Figure 6). 'All other flooring' is mostly particleboard and strand board. The percentages include upper floors (usually wood based) so are impacted by the trend towards multi-storey buildings, which made up 15% of new dwellings in 2020.

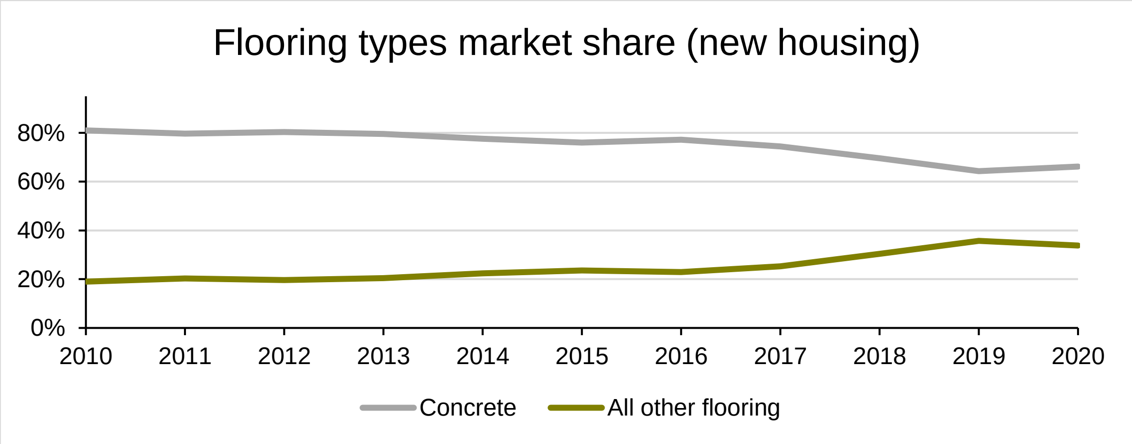

Figure 6. Flooring types market share.

3.6 Floor joists

Solid timber increased in the market share in 2020 with 75% compared to the 'other' category, which has decreased from 45% to 25% (Figure 7). The 'other' category primarily consists of various proprietary wood and steel composite joists and traditional heavy-gauge steel joists.

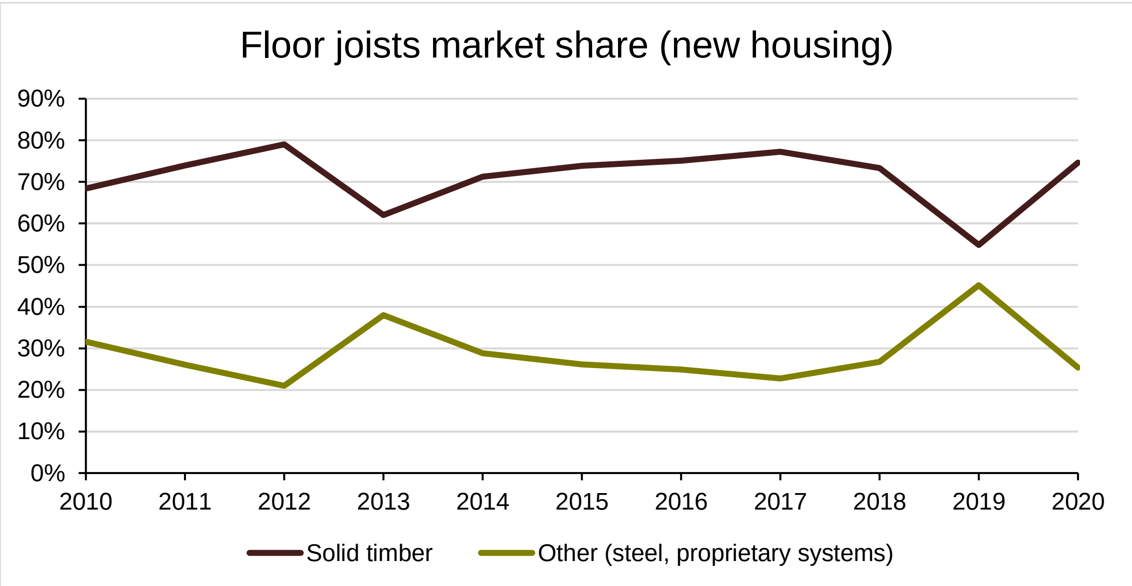

Figure 7. Floor joists market share.

3.7 Insulation

Wall insulation, ceiling insulation and floor insulation for concrete slabs and timber floors are dealt with separately in this section.

3.7.1 Wall insulation

Fibreglass is the dominant wall insulation material (Figure 8). Its share has decreased slightly in 2020. The 'other' category has grown to 12% and is mainly polyester.

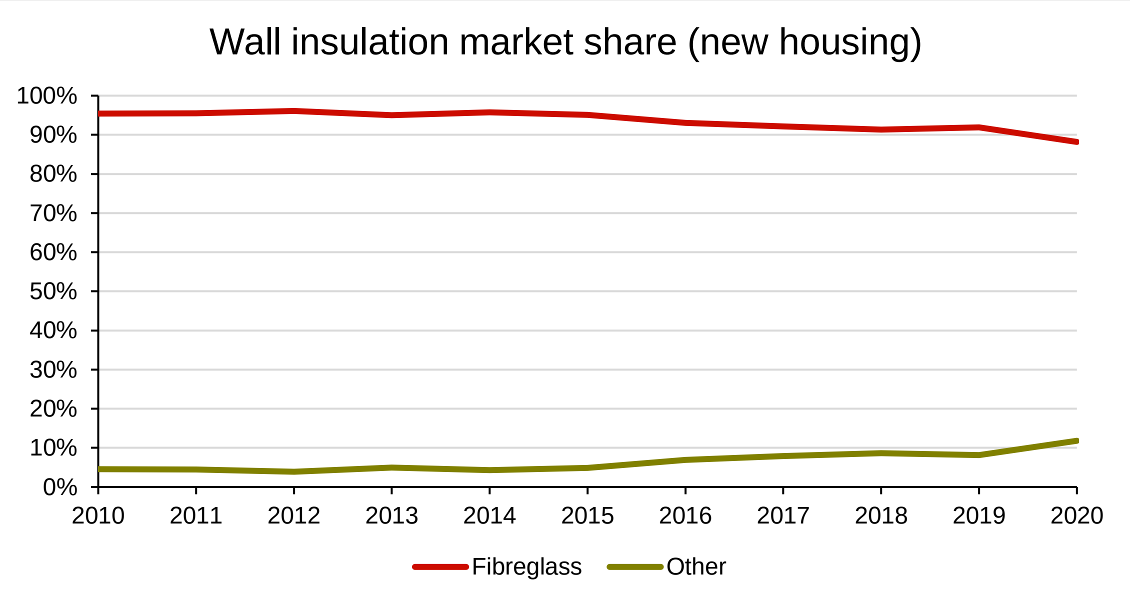

Figure 8. Wall insulation market share.

3.7.2 Ceiling insulation

Fibreglass is also the dominant ceiling insulation material (Figure 9). It is common for builders to use the same type of material (often the same brand) for walls and ceiling, so market shares for wall and ceiling insulation tend to move together.

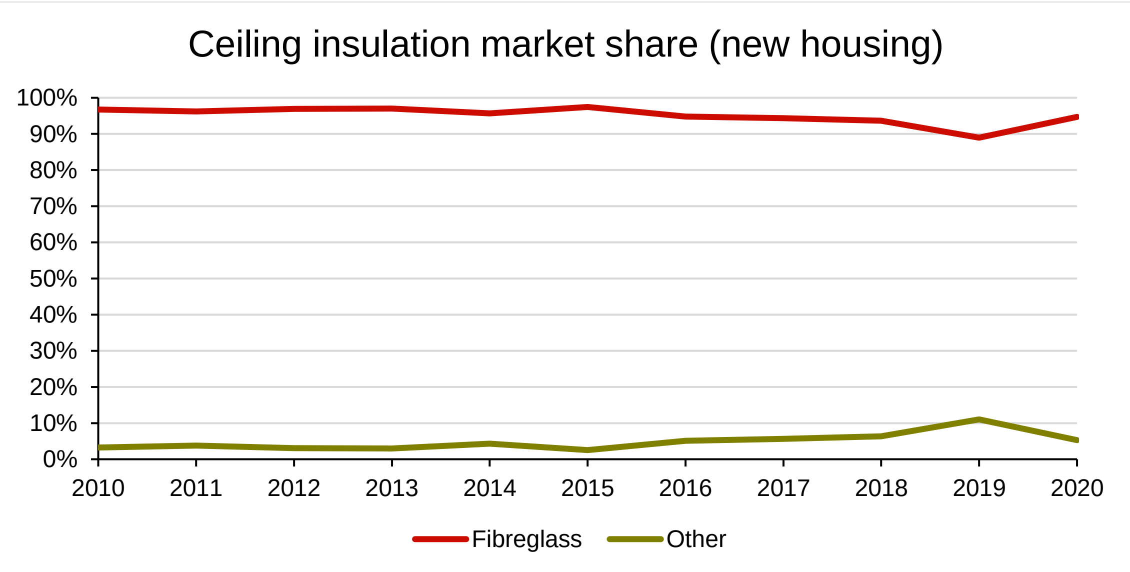

Figure 9. Ceiling insulation market share.

3.7.3 Floor insulation

In 2015, the question on insulation of concrete slabs was changed. We presented the mix of insulation types used in 2015 against total insulation for the historical series in

Figure 10. It will take further data with the new question to establish a trend for this series as the data is too inconsistent for any trends to become apparent. Underslab full/partial insulation is the most common insulation for concrete slabs in new housing. Very few builders reported insulating the perimeter edge or under the slab footing.

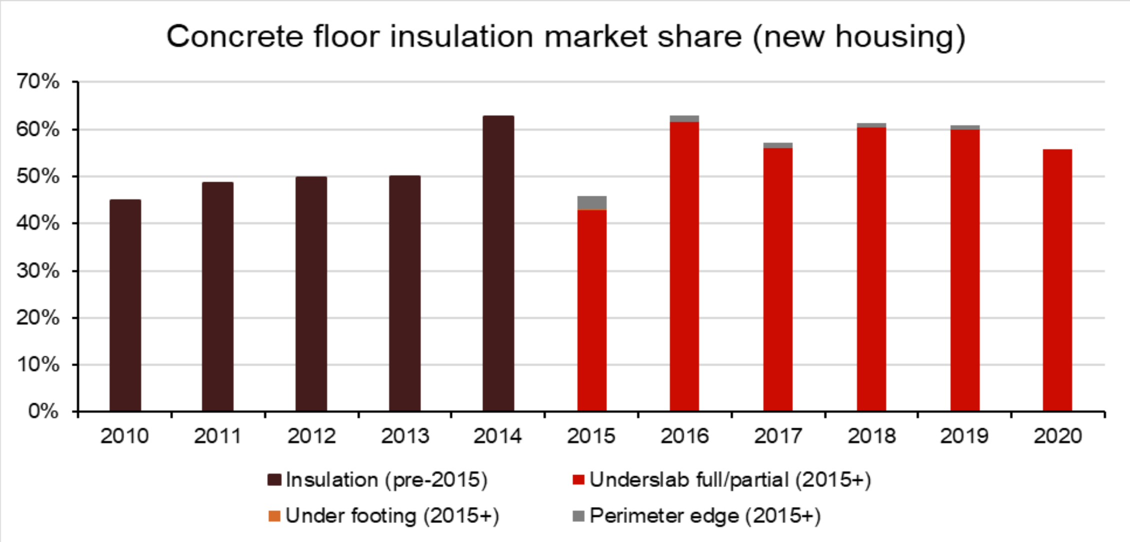

Figure 10. Concrete slab insulation.

Timber subfloors are much less common than concrete slabs in new housing. Therefore, the shares presented in Figure 11 are susceptible to large swings given the limited use of timber floor insulation in new houses. Polystyrene remains the dominant timber floor insulation material, followed by fibreglass and polyester. Meanwhile foil was non-existent as a timber floor insulator in 2018, 2019 and 2020, following a ban in 2016[2] and a trend of steady decline since 2014.

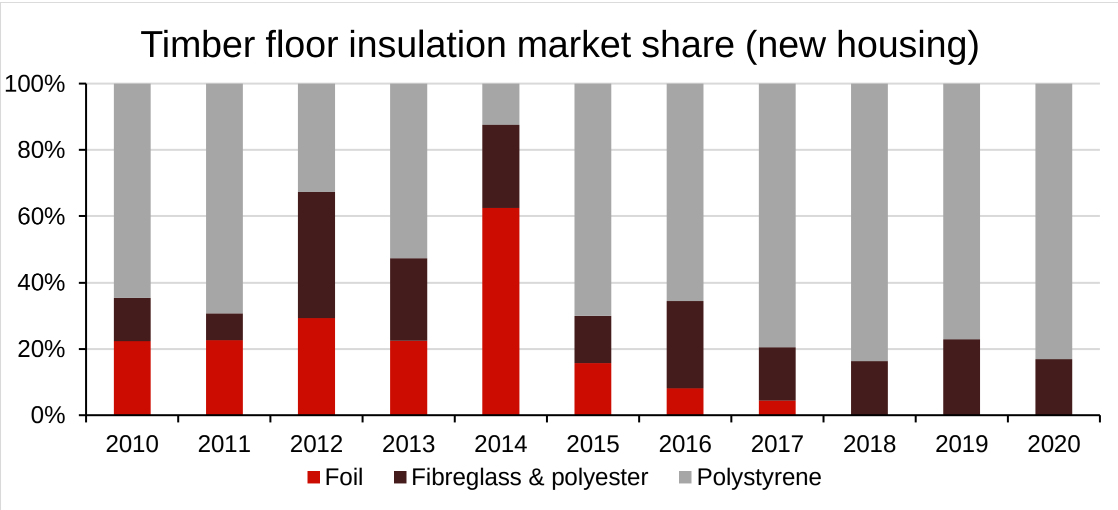

Figure 11. Timber floor insulation market share.

[2] https://www.building.govt.nz/assets/Uploads/building-code-compliance/warnings-bans/201601-Foil-insulation-ban.pdf

BRANZ

Appendix A: Survey forms

A.1 Survey form October 2006

NEW DWELLING

Please give this form to the builder or designer to fill out for the building consent listed over the page.

Number of dwelling units [ ] in this consent. Contract value of work (incl sub-trades) $ .... incl GST.

Floor areas Total floor area ________ Sq metres (include attached garage, exclude decks).

	Particleboard	Plywood	Strip timber (not overlay, exclude decks).	Concrete
Ground level	______ Sq metres	______ Sq metres	______ Sq metres	______ Sq metres
First level	______ Sq metres	______ Sq metres	______ Sq metres	______ Sq metres
2nd or more levels	______ Sq metres	______ Sq metres	______ Sq metres	______ Sq metres

Decks (above ground, not concrete patios) (circle one)

Includes a deck ? Yes / No

Deck area______Sq metres

(circle one or more)

Deck surface material = radiata/ hardwood/ butyl/ tiles/ other/ pour-on.

Deck substrate = plywood sht/ fibre cement sht/ concrete/ timber joists.

Wall Framing (tick appropriate box)

Radiata [ ] Steel [ ] Douglas fir [ ] Concrete block [ ] Other [ ] (state) ....

Was the wall framing precut or prenailed ? Yes / No (circle one)

Framing timber treatment

	Untreated kiln dry	Untreated wet	H1.2	T1.2 (orange)	H3.1
Tick one or more	[ ]	[ ]	[ ]	[ ]	[ ]
State where used (eg outer walls, sub floor, etc)	....	....	....	....	....

Floor joists

	None	Solid timber	Posistrut	Hybeam (I beam)	Steel	Twinaplate	Origin (I beam)	Other (state)
Tick one or more	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Joist depth mm ....mm ....mm ....mm ....mm ....mm ....mm ....mm

Insulation (tick one or more)

	R value of insulation	Pink Batts	Bradford Gold	Premier Fibreglass	Blown FG Rocwool	Greenstuf (polyester)	Other polyester	Treated paper	Wool	Other (state)
Wall insulation	R-	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Ceiling insulation	R-	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

	R value	Expol Warmfeet	Polystyrene panel	Cosy Floor	Sisalation Foil	Other (state)
Floor insulation	R-	[ ]	[ ]	[ ]	[ ]	[ ] ....

Installer (name) ....

Noise Control (circle one)

Have you installed noise control products? Yes / No What type? ....

Building wraps (tick one or more)

Roof wrap	Flamestop [ ]	Thermakraft [ ]	Bitumac [ ]	GIB underlay [ ]	Greencap [ ]	Pauloid [ ]	Black Paper [ ]	Other (state) [ ]
Wall wrap	Flamestop [ ]	Tyvek [ ]	Thermakraft coverup [ ]	Framegard II [ ]	Greenwrap [ ]	Fastwrap [ ]	Black Paper [ ]	Other (state) [ ]

Wall cladding State type (and approx % wall coverage)

Type .... % area................ eg fibre cement sheet, 75% also plywood, solid plaster(min 18mm),

Type .... % area................ claybrick, 15% plaster on polystyrene, concrete

Type .... % area................ cedar 10% block, PVC weatherboard, etc.

If yes to Fibre Cement cladding what is the Manufacturer? (tick one or more) Hardies [ ] BGC [ ] CSR [ ] PRIMA [ ] Other [ ]

Fibre Cement Product used as (Circle one or more) Applied texture finish sheet, Flat sheet, FC plank, FC weatherboard/Linea

If solid plaster, what backing? (circle one if solid plaster) fibre cement, plywood, paper, Triple S, block/brick, metal lathe

Roof cladding Type .... (or circle one)

eg metal tiles, prepainted corrugated, other steel profiles, concrete tiles, butyl, asphalt shingles, fibreglass shingles, etc.

Wet wall linings (Tick one or more in each row)

	Formica Aquapanel	Seratone	Hardies Villaboard	Hardiglaze	Standard GB	GIB Aqualine	Other	(state)
Bathroom	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	....
Laundry	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	....

Is fibre cement sheet flooring underlayused in the bathroom or laundry? Yes/ No (circle one).

Energy efficiency Tick if anyof the following are being installed:

Double glazing [ ] Solar water heaters [ ] Dual flush toilets [ ] Energy efficient lights [ ] Heat pump [ ] Low flow showers [ ] Built-in window vents [ ]

Type of Builder How many houses or dwelling units does your companybuild per year (approx) . ...

Construction Delays

If you signed a contract with the owner now, how many weeks before on-site work would start? ....wks

Thank You. Please fold this form, and freepost it in the return envelope Oct-06

A.2 Survey form October 2010

NEW DWELLING

Please give this form to the builder or designer to fill out for the building consent listed over the page.

Number of dwelling units ☐ in this consent. Contract value of work (incl sub-trades) $ .... incl GST.

Floor areas Total floor area __________ Sq metres (include attached garage, exclude decks).

	Particleboard	Plywood	Strip timber (not overlay, exclude decks).	Concrete
Ground level	______ Sq metres	______ Sq metres	______ Sq metres	______ Sq metres
First level	______ Sq metres	______ Sq metres	______ Sq metres	______ Sq metres
2nd or more levels	______ Sq metres	______ Sq metres	______ Sq metres	______ Sq metres

Building Envelope Risk Score and Wind Zone

What is the risk score (enter score for EACH elevation) North ☐ West ☐ South ☐ East ☐

What is the wind zone (tick one box) Low ☐ Medium ☐ High ☐ Very High ☐

Wall Framing (tick appropriate box)

Radiata ☐ Steel ☐ Douglas fir ☐ Concrete block ☐ Solid wood ☐ Other ☐ (state) ....

Was the wall framing precut or prenailed ? Yes / No (circle one)

Stud size and spacing (tick one or more)

90x45 mm @600ctrs ☐ 90x40 mm @600ctrs ☐ 90x45 mm @400ctrs ☐ 90x40 mm @400ctrs ☐ 140x45 mm @600ctrs ☐ 140x45 mm @400ctrs ☐ Other (please state)__________ ☐ __________

Heating Systems Tick one or more

Heat pump ☐ Wood/Pellet burner ☐ Ducted central heating (Not including DVS or HRV) ☐ Underfloor heating (waterpipe) ☐ Underfloor heating (electric) ☐ DVS/HRV ☐ Gas ☐

Floor joists Tick one or more

	None	Solid timber	Posistrut	Hyjoist	Steel	Twinaplate	Hyne (I beam)	lumberworX	Other (state)
Tick one or more	☐	☐	☐	☐	☐	☐	☐	☐	☐
Joist depth		.........mm	.........mm	.........mm	.........mm	.........mm	.........mm	.........mm	.........mm

Insulation (tick one or more)

	Insulation R value	Pink Batts	Bradford Gold	Premier Fibreglass	Blown FG Rocwool	Greenstuf (polyester)	Other polyester	Wool	Polystyrene	Other (state)
Wall insulation	R -	☐	☐	☐	☐	☐	☐	☐	☐	....
Ceiling insulation	R -	☐	☐	☐	☐	☐	☐	☐	☐	....

	Insulation R value	Expol Warmfeet	Polystyrene (NOT polythene) Under slab	Snug Floor	Sisalation Foil	Ribraft Floor	Cupolex	Other (state)
Floor Insulation	R -	☐	☐	☐	☐	☐	☐	☐ ....

Insulation Installer (name) Builder ☐ Other, please specify ☐ ....

Please tick..................

Noise Control

Have you installed noise control products? **(circle one) Yes / No**

If so then what type? (Tick one or more boxes) Pink Batts Silencer ☐ Gib Noiseline ☐ Other Gib Products ☐ Bradford Gold ☐ Pink Batts ☐ Polyester ☐ Other Specify ☐

Building wraps (tick one or more)

Roof wrap: Flamestop ☐ Thermakraft ☐ Bitumac ☐ CoverTek ☐ Pauloid ☐ Black Paper ☐ Other (state) ☐ Diflex 130 ☐ Tekton ☐

Wall wrap: Flamestop ☐ Tyvek ☐ Thermakraft ☐ Framegard ☐ Home RAB ☐ Fastwrap ☐ Black Paper ☐ Other (state) ☐ Diflex 130 ☐ Tekton ☐

DPC

What DPC products have you installed? Damp-a-thene ☐ Mathiod ☐ Supercourse ☐ Other, specify ☐

Flashing Tapes

What flashing tapes are installed? Weatherseal ☐ Aluband ☐ Tyvek Flexwrap ☐ Protectowrap ☐ Frameflash ☐ Other, specify ☐

Wall cladding State type (and approx % wall coverage)

Type .... % area ....
Type .... % area ....
Type .... % area ....

eg fibre cement sheet, 75%; clay brick, 15%; cedar 10%; also plywood, solid plaster(min 18mm), plaster on polystyrene, concrete block, PVC weatherboard, etc.

If Fibre Cement cladding is used, who is the Manufacturer? (tick one or more) Hardies ☐ BGC ☐ CSR ☐ PRIMA ☐ Other ☐ Eterpan ☐

Fibre Cement Product used as (Circle one or more) Applied texture finish sheet, Flat sheet, Linea (16mm), FC plank (7.5mm)

If solid plaster, what backing? (circle one if solid plaster) fibre cement, plywood, paper, Triple S, block/brick, metal lathe

Roof cladding Type .... (or circle one)

eg metal tiles, prepainted corrugated, other steel profiles, concrete tiles, butyl, asphalt shingles, fibreglass shingles, etc.

If roof is metal tiles, specify Manufacturer name ....

Is the Majority of the roof slope: (tick one) Greater/equal than 12 degrees ☐ less than 12 degrees ☐ Don't know ☐

Wet wall linings (Tick one or more in each row)

	Formica Aquapanel	Seratone	Villaboard	Hardies Hardiglaze	Standard GIB	GIB Aqualine	Other, specify	Timber	Horizon
Bathroom	☐	☐	☐	☐	☐	☐	☐	☐	☐
Laundry	☐	☐	☐	☐	☐	☐	☐	☐	☐

Is fibre cement sheet flooring underlay used in the bathroom or laundry ? Yes/ No (circle one)

Thank You. Please fold this form, and freepost it in the return envelope. Oct-10

A.3 Survey form October 2015

NEW DWELLING

Please give this form to the builder or designer to fill out for the building consent listed over the page.

Number of dwelling units in this consent ☐ Contract value of work (incl sub-trades) $.................. Incl GST.

Was this dwelling designed by a registered architect? Yes / No (circle one)

Floor Areas and Ceiling Height Total Floor Area ______ Sq metres (include attached garage, exclude decks).

	Particleboard	Plywood	Strip timber (not overlay exclude decks)	Strandboard	Concrete	Height of level to ceiling
Ground level	____ Sq m	____ Sq m	____ Sq m	____ Sq m	____ Sq m	____ metres
First level	____ Sq m	____ Sq m	____ Sq m	____ Sq m	____ Sq m	____ metres
2nd or more levels	____ Sq m	____ Sq m	____ Sq m	____ Sq m	____ Sq m	____ metres

Wall Framing (tick appropriate box)

Radiata ☐ Steel ☐ Douglas Fir ☐ Concrete Block ☐ Solid Wood ☐ Other ☐ (state).............

Was the wall framing precut or prenailed? Yes / No (circle one)

How soon after being issued the consent will you have stood the house framing?

0-3 months ☐ 4-6 months ☐ 7-9 months ☐ 10-12 months ☐ Over 12 months ☐

Floor Joists (tick one or more)

	None	Solid Timber	Posistrut	Hyjoist	Steel	Twinaplate	Hyne (I beam)	lumberworX	Other state
	☐	☐	☐	☐	☐	☐	☐	☐	☐
Joist depth:	.... mm	.... mm	.... mm	.... mm	.... mm	.... mm	.... mm	.... mm	.... mm

Insulation (tick one or more)

	Insulation R Value	Pink Batts	Bradford Gold	Premier	Knauf Earthwool	Autex Greenstuf	Other Polyester	Wool	Polystyrene	Other (state)
Wall insulation	R-	☐	☐	☐	☐	☐	☐	☐	☐	....
Ceiling insulation	R-	☐	☐	☐	☐	☐	☐	☐	☐	....

Is the floor insulated? (circle one) Yes / No If yes, what floor insulation was used?

		Concrete slab insulation			**Timber sub-floor insulation**			
		Underslab full/partial	Perimeter edge	Under footing	Polystyrene	Polyester	Glasswool	Foil
Floor insulation	R-	☐	☐	☐	☐	☐	☐	☐

Insulation Installer (name) Builder ☐ **Other (please specify)** ☐ ....

Noise Control

Have you installed noise control products? **(cicle one) Yes / No**

If so, then what type? (tick all that apply)

Pink Batts Silencer ☐ GIB Noiseline ☐ Other GIB Products ☐ Bradford Gold ☐ Pink Batts ☐ Polyester ☐

Other (please specify) ....

Building Wraps (tick one or more)

Roof Wrap: Flamestop ☐ Bitumac ☐ Tyvek Supro ☐ CoverTek ☐ Thermakraft ☐ Fastwrap ☐ Pauloid ☐ Other (state) ....

Wall Wrap: Bitumac ☐ Tyvek Homewra ☐ Watergate ☐ Covertek ☐ Thermakraft ☐ Tekton ☐ Fastwrap ☐ Pauloid ☐ Ecoply Barrier ☐ Other (state) ☐

DPC

What DPC products have you installed? Damp-a-thene ☐ Malthoid ☐ Supercourse ☐ Other, Specify: ☐

Flashing Tapes

What flashing tapes are installed? Bulldog ☐ Aluband ☐ Tyvek Flexwrap ☐ Protectowrap ☐ Frameflash ☐ Other, Specify: ☐

Wall Cladding State type and approximate % wall coverage

e.g. Fibre cement sheet, 75%
Clay Brick, 15%
Cedar WB, 10%

Other examples include: plywood sheet, plaster on claybrick, steel zincalum, fibre cement plank, glazing, EIFS, aerote concrete panel, radiata WB, linea WB etc.

Type .... % area ....
Type .... % area ....
Type .... % area ....

If Fibre Cement product, what is it used as? (circle one) Applied texture finish sheet, Flat sheet, Linea (16mm), FC plank (7.5mm)

Roof Cladding

What roof cladding was used? (circle one or state below)

metal tiles, corona shake, prepainted corrugated, trough zincalum, corrugated zincalum, other steel profiles, concrete tiles, asphalt shingles, butyl, other (state) ....

Spouting

What profile is the SPOUTING?
¼ round/quad ☐ ½ round ☐ Old gothic ☐ Box ☐ Other (state)....................

What material is the SPOUTING?
PVC (White) ☐ PVC (Colour) ☐ Steel ☐ Aluminium ☐ Copper ☐ Other (state)....................

Who installed the SPOUTING?
Roofer ☐ Spouting installer ☐ Builder ☐ Plumber ☐ Other (state)....................

Downpipes

What profile are the DOWNPIPES?
65mm round ☐ 80mm round ☐ 100mm round ☐ 65x50mm rectangular ☐ 100x50mm rectangular ☐
Other (state)....................

What material are the DOWNPIPES?
PVC (White) ☐ PVC (Colour) ☐ Steel ☐ Aluminium ☐ Copper ☐ Other (state)....................

Who installed the DOWNPIPES?
Roofer ☐ Spouting installer ☐ Builder ☐ Plumber ☐ Other (state)....................

Wet Wall Linings (tick one or more in each row)

	Formica Aquapanel	Seratone	Villaboard	Hardies Hardiglaze	Standard GIB	GIB Aqualine	WaterShield	Other specify	Timber	Horizon
Bathroom	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Laundry	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Wall Linings (excluding wet walls)

Elephant Plasterboard ☐ GIB Plasterboard ☐ Knauf Plasterboard ☐ Other (state) ....

Ceiling Linings and Battens

Ceiling Linings (tick one or more) 10mm plasterboard ☐ 13mm plasterboard ☐ Ultraline ☐ Tiles ☐ Other ☐

Ceiling Battens (circle one): timber or metal **Are there any downlights recessed in to ceiling? Yes / No** (circle one) **IF YES, how many ?** ....

Thank You. Please fold this form, and freepost it in the return envelope Oct-15

Appendix B: Tables of data for the charts

Table 1. Roof claddings market share.

Roof claddings market share in new housing Yearly Data 2010-2020											
	2006	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sheet metal	45%	54%	50%	53%	54%	55%	56%	55%	70%	71%	71%
Tiles (metal and concrete)	41%	42%	42%	35%	38%	39%	32%	31%	24%	18%	25%
Other (membrane, plastic, etc)	14%	4%	8%	12%	8%	6%	12%	14%	6%	12%	4%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.											

Table 2. Wall claddings market share.

Wall claddings market share in new housing Yearly Data 2010-2020											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Finish bricks clay & concrete	46%	44%	44%	47%	38%	38%	35%	31%	28%	25%	22%
Weatherboard (timber, fib cmt, PVC)	28%	31%	31%	32%	34%	37%	39%	42%	42%	44%	42%
Other (aerated concrete, FC sheet, plywood, EIFS, stucco, sheet steel etc)	26%	25%	24%	21%	28%	26%	26%	27%	30%	32%	36%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.											

Table 3. Wall framing market share.

Wall framing market share in new housing Yearly Data 2010-2020											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Timber (framing + solid timber)	90%	85%	88%	95%	94%	93%	93%	90%	94%	86%	88%
Other (steel framing, concrete masonry, polybloc, earth, etc)	10%	15%	12%	5%	6%	7%	7%	10%	6%	14%	12%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.											

Table 4. Flooring types market share.

Flooring types market share in new housing Yearly Data 2010-2020											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Concrete	81%	80%	80%	80%	78%	76%	77%	74%	70%	64%	66%
All other flooring	19%	20%	20%	20%	22%	24%	23%	25%	30%	36%	34%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.											

Table 5. Floor joists market share.

Floor joists market share in new housing Yearly Data 2010-2020											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Solid Timber	68%	74%	79%	62%	71%	74%	75%	77%	73%	55%	75%
Other (steel, proprietary systems)	32%	26%	21%	38%	29%	26%	25%	23%	27%	45%	25%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.											

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Table 6. Wall insulation market share.

Wall insulation market share in new housing Yearly Data 2010-2020											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fibreglass	95%	95%	96%	95%	96%	95%	93%	92%	91%	92%	88%
Other	5%	5%	4%	5%	4%	5%	7%	8%	9%	8%	12%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: percentage weighted to allow for the regional building activity.

Table 7. Ceiling insulation market share.

Ceiling insulation market share in new housing Yearly Data 2010-2020											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fibreglass	97%	96%	97%	97%	96%	97%	95%	94%	94%	89%	95%
Other	3%	4%	3%	3%	4%	3%	5%	6%	6%	11%	5%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: percentage weighted to allow for the regional building activity.

Table 8. Concrete slab waffle pod and sheet polystyrene use.

Concrete floor insulation in new housing Yearly Data 2010-2020											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Insulation (pre-2015)	45%	49%	50%	50%	63%						
Underslab full/partial (2015+)						43%	61%	56%	60%	60%	56%
Under footing (2015+)						0%	0%	0%	0%	2%	1%
Perimeter edge (2015+)						3%	1%	1%	1%	1%	2%
TOTAL	45%	49%	50%	50%	63%	46%	63%	57%	61%	62%	59%

Note: percentage weighted to allow for the regional building activity.

Table 9. Timber floor insulation market share.

Timber floor insulation market share in new housing Yearly Data 2010-2020											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Foil	22%	23%	29%	22%	62%	16%	8%	4%	0%	0%	0%
Fibreglass & Polyester	13%	8%	38%	25%	25%	14%	26%	16%	16%	23%	17%
Polystyrene	65%	69%	33%	53%	12%	70%	66%	80%	84%	77%	83%
TOTAL	100%	100%	100%	100%	100%	100%	100%	80%	100%	100%	100%

Note: percentage weighted to allow for the regional building activity.

Table 10. Average floor area comparison – survey responses and consent data.

Average floor area (square metres) for new housing Yearly Data 2010-2020														
	2006	2007	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Survey responses	221	232	233	217	214	208	203	214	200	201	192	196	195	185
Consent data (1)	215	213	216	216	211	214	213	213	209	209	207	201	194	200

Note: survey average floor area weighted to allow for regional building activity

(1) Source: Statistics New Zealand