

Physical characteristics of new houses 2022

Nic Guerrero and Orin Lockyer





1222 Moonshine Rd, RD1, Porirua 5381
Private Bag 50 908, Porirua 5240
New Zealand
branz.nz

© BRANZ 2025
ISSN: 1179-6197

Preface

This is the 12th 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 2022

BRANZ Study Report SR498

Authors

Nic Guerrero and Orin Lockyer

Reference

Guerrero, N. & Lockyer, O. (2025). *Physical characteristics of new houses 2022* (BRANZ Study Report SR498). BRANZ Ltd.

Abstract

Official data on the characteristics of new housing is very limited. Building consents data held by Stats NZ 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 2022 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.

Contents

1. INTRODUCTION	1
2. SUMMARY	3
3. MAIN RESULTS.....	4
3.1 Roof claddings	4
3.2 Wall claddings.....	4
3.3 Wall framing	5
3.4 Number of storeys.....	6
3.5 Flooring.....	6
3.6 Floor joists.....	7
3.7 Insulation	7
3.7.1 Wall insulation.....	8
3.7.2 Ceiling insulation	8
3.7.3 Floor insulation.....	9
APPENDIX A: SURVEY FORMS.....	10
APPENDIX B: TABLES OF DATA FOR THE CHARTS.....	13

Figures

Figure 1. Consent versus sample average floor area.....	2
Figure 2. Roof claddings market share.	4
Figure 3. Wall claddings market share.....	5
Figure 4. Wall framing market share.	5
Figure 5. Number of storeys by territorial authority.	6
Figure 6. Flooring types market share.	7
Figure 7. Floor joists market share.....	7
Figure 8. Wall insulation market share.	8
Figure 9. Ceiling insulation market share.	8
Figure 10. Concrete slab insulation.	9
Figure 11. Timber floor insulation market share.	9

Tables

Table 1. Roof claddings market share.	13
Table 2. Wall claddings market share.....	13
Table 3. Wall framing market share.	13
Table 4. Flooring types market share.	13
Table 5. Floor joists market share.....	13
Table 6. Wall insulation market share.	14
Table 7. Ceiling insulation market share.	14
Table 8. Concrete slab waffle pod and sheet polystyrene use.....	14
Table 9. Timber floor insulation market share.	14
Table 10. Average floor area comparison – survey responses and consent data.....	14

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 or book voucher) for the return of each survey form.

The consent information is obtained from the Whats On¹ 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 surveys return 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 2022 is much lower than the consent average floor area.

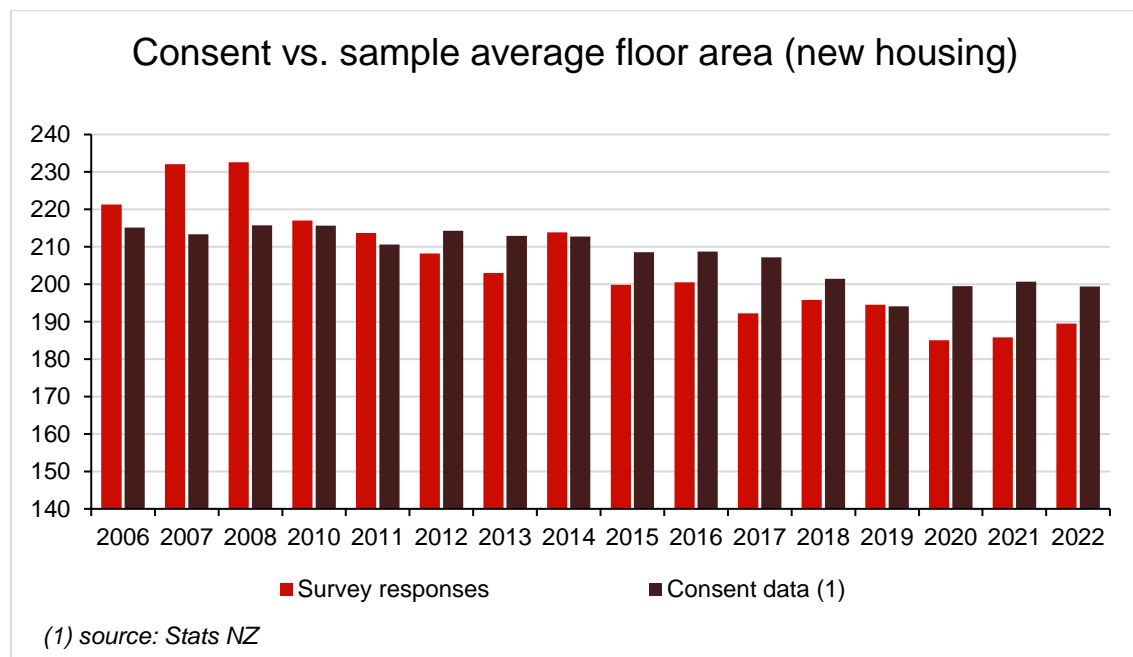


Figure 1. Consent versus sample average floor area.

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 continues to be the predominant roof cladding option although its market share decreased slightly in 2022.
- The market share of weatherboard profiles has increased significantly. The 'other' category, which consists of metal, non-weatherboard fibre-cement, exterior insulation and finish systems (EIFS) and aerated autoclaved concrete (AAC) cladding options, decreased significantly, as did finish bricks (clay and concrete). The market share of each category has returned to pre-pandemic levels.
- Timber framing continues to hold a high market share.

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 continues to be the predominant roof cladding material. However, after experiencing a significant increase in 2017, which was sustained through to 2021, the market of sheet metal has decreased slightly in 2022 (Figure 2).

The share of tiles (both metal and concrete) has increased in 2022. Similarly, the 'other' category has increased for the second year in row 2022. The 'other' category mostly consists of shingle and membrane roofing products.

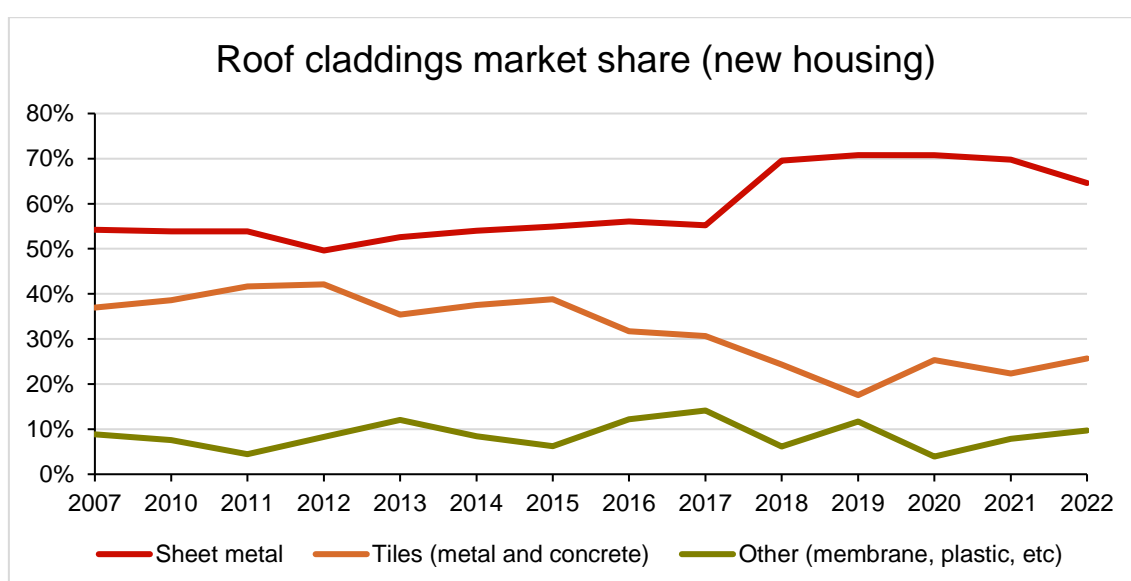


Figure 2. Roof claddings market share.

3.2 Wall claddings

Between 2020 and 2021, the market share of finish bricks grew from 22.2% to 37%. Despite this sharp increase, the market share of finish bricks (both clay and concrete) has decreased significantly in 2022, falling under the 'other' and weatherboard categories. The results from this year show that the market share of finish bricks has returned to pre-pandemic 2020 levels (Figure 3).

The use of weatherboard profiles has increased significantly, jumping from 26% in 2021 to 44% in 2022. Timber makes up just under two-thirds of the surveyed weatherboard profiles while the remainder consist of fibre-cement and uPVC.

Major constituents of the 'other' category are metal, non-weatherboard fibre-cement, EIFS and AAC.

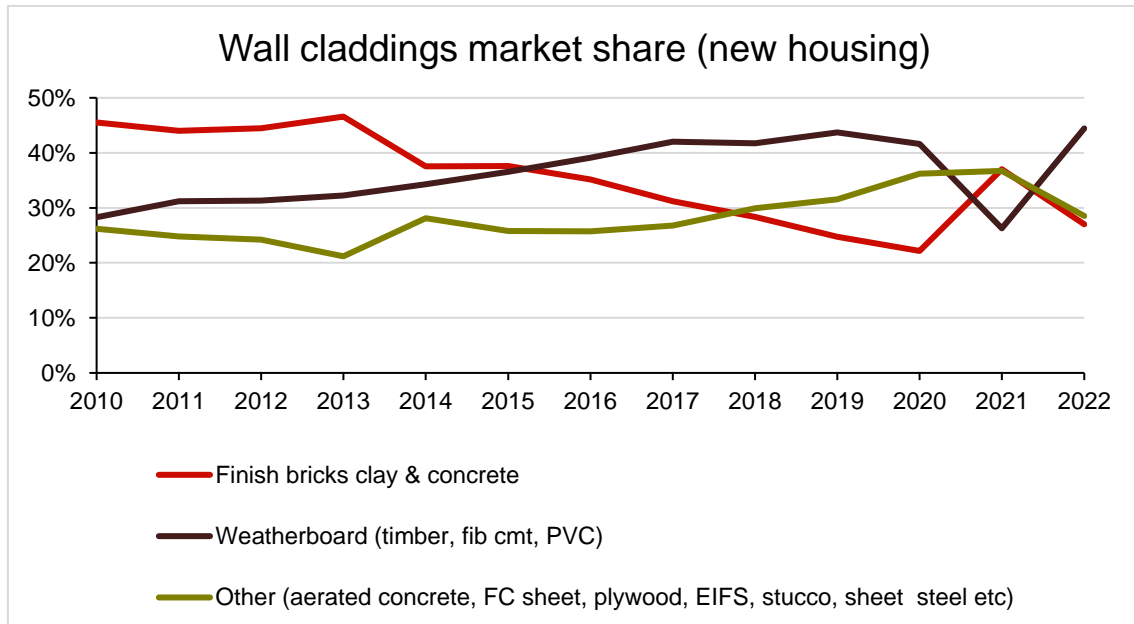


Figure 3. Wall claddings market share.

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 market share of timber framing increased in 2022 to 91% from 86% the year prior. Laminated veneer lumber (LVL) only made up 3% of timber framing.

The majority (90%) of wall framing is precut or prenailed, which was a slight decrease from the year prior.

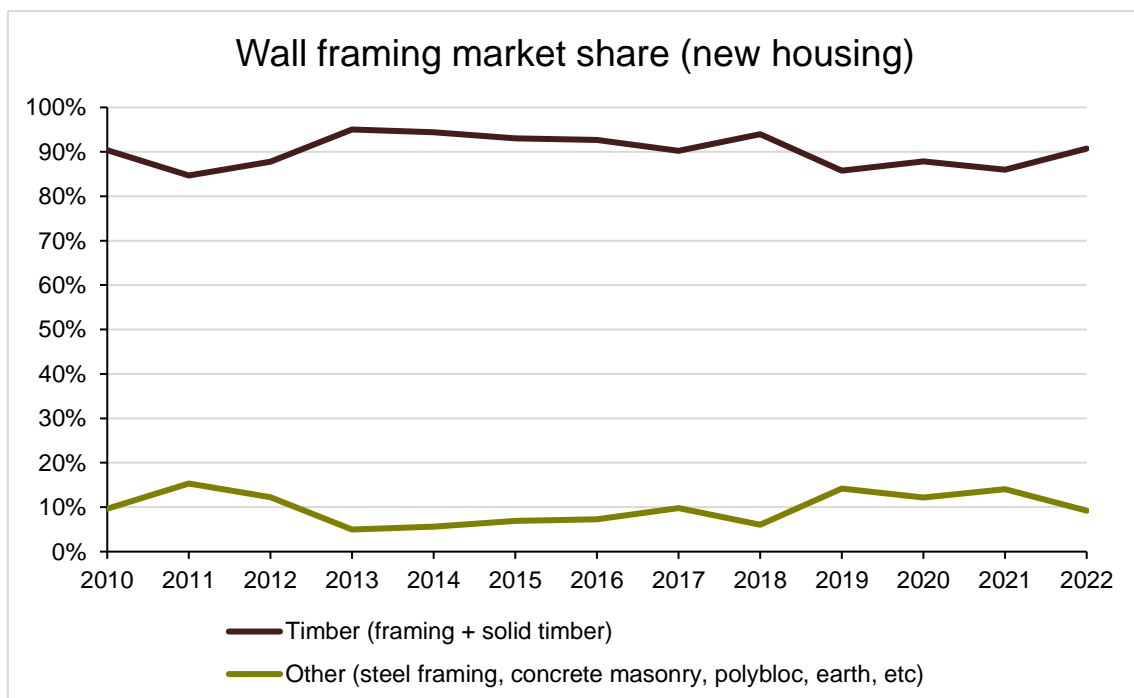


Figure 4. Wall framing market share.

3.4 Number of storeys

Figure 5 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.

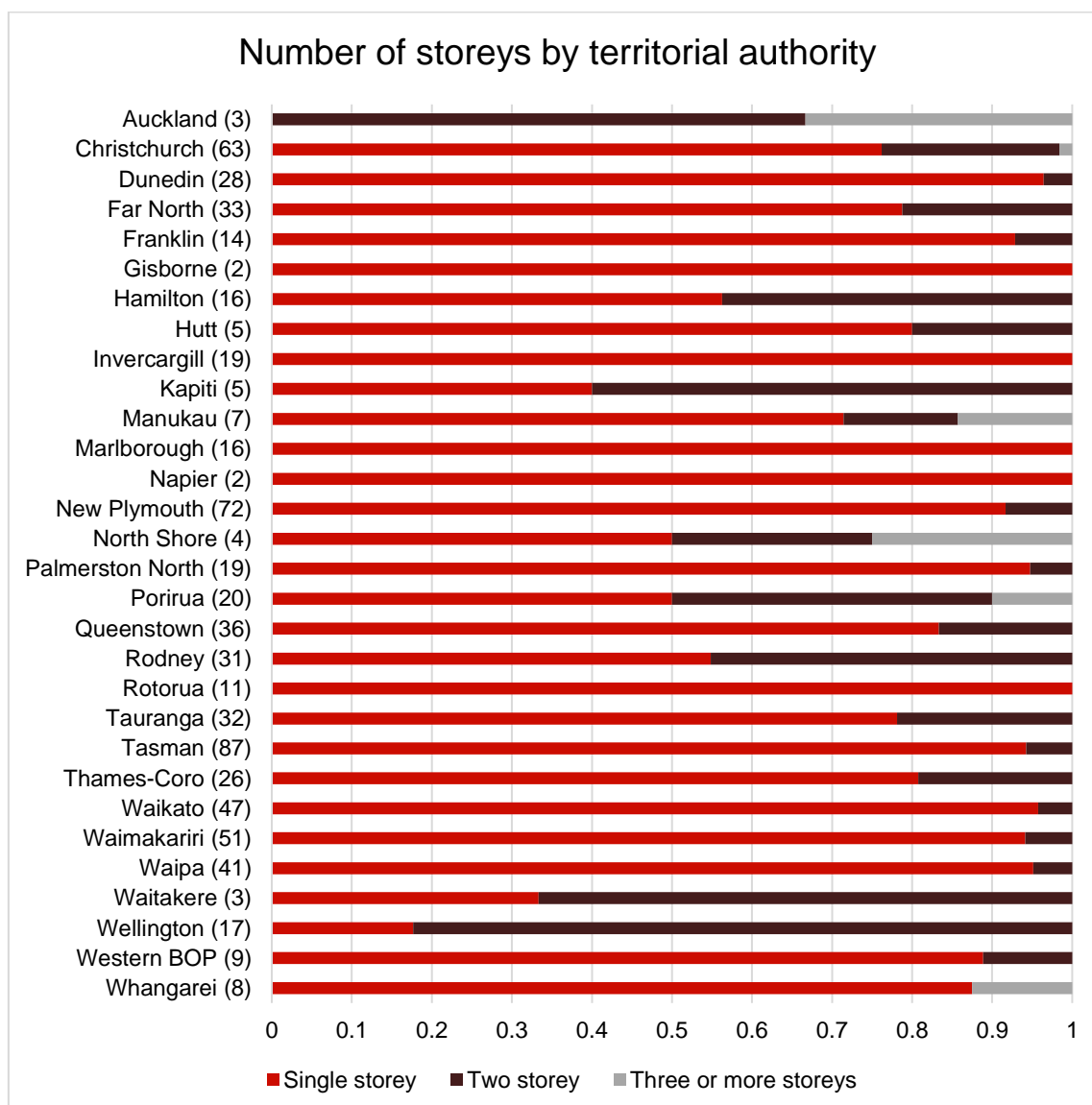


Figure 5. Number of storeys by territorial authority.

3.5 Flooring

Concrete flooring has declined slightly, while the market share of 'all other flooring' increased slightly by 3% 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 31% of new dwellings in 2022.

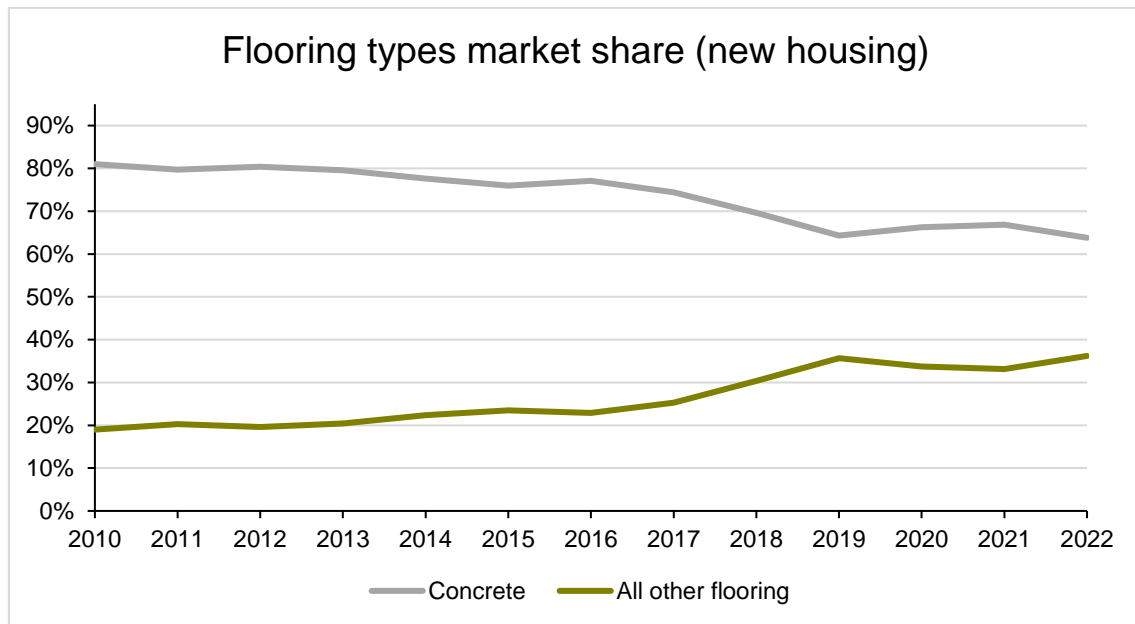


Figure 6. Flooring types market share.

3.6 Floor joists

Solid timber increased slightly in market share in 2022 while the 'other' category saw a slight decrease (Figure 7). The 'other' category primarily consists of various proprietary wood and steel composite joists and traditional heavy-gauge steel joists.

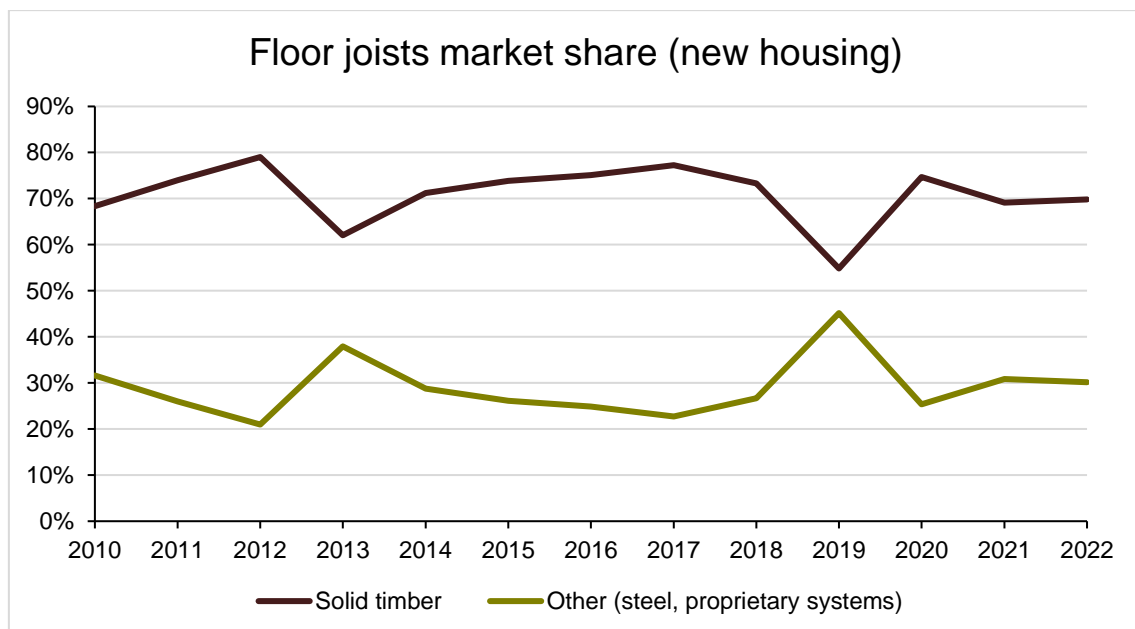


Figure 7. Floor joists market share.

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 remains the dominant wall insulation material (Figure 8). The market share of fibreglass has increased significantly from 83.6% in 2021 to 95% in 2022. The 'other' category has decreased in market share going from just over 16% in 2021 to 5% in 2022. The 'other' category mainly consists of alternative polyester options.

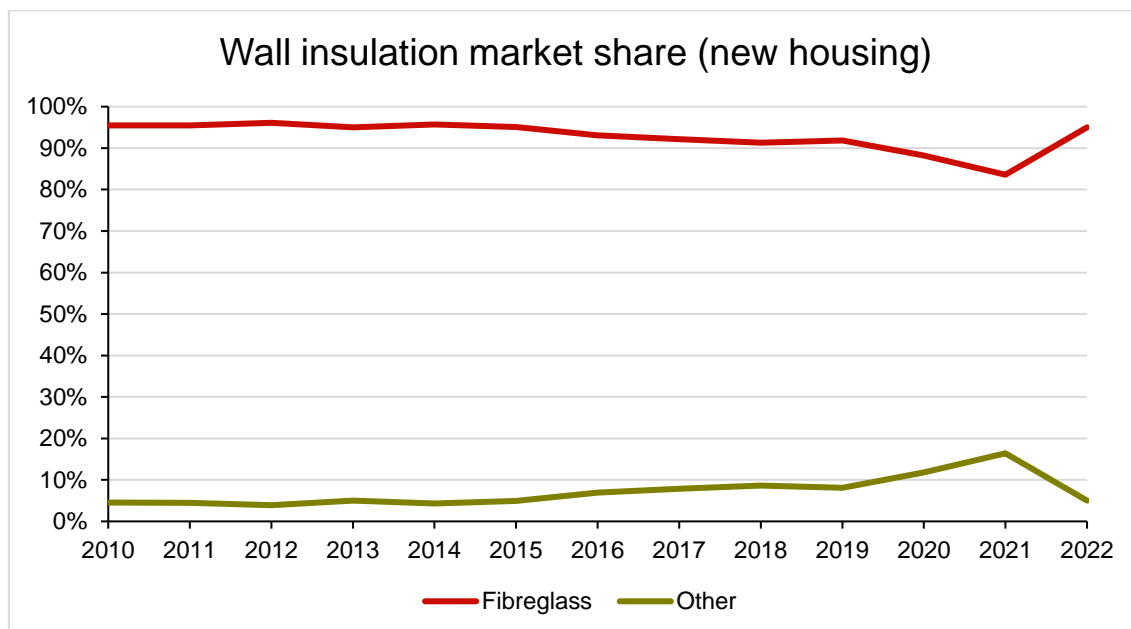


Figure 8. Wall insulation market share.

3.7.2 Ceiling insulation

Fibreglass is the dominant ceiling insulation material (Figure 9). The market share of fibreglass has also increased significantly from 87.4% in 2021 to 98% in 2022. The 'other' category has decreased significantly, going from 12.6% in 2021 to 2.3% in 2022. The 'other' category consists primarily of alternative polyester products. 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.

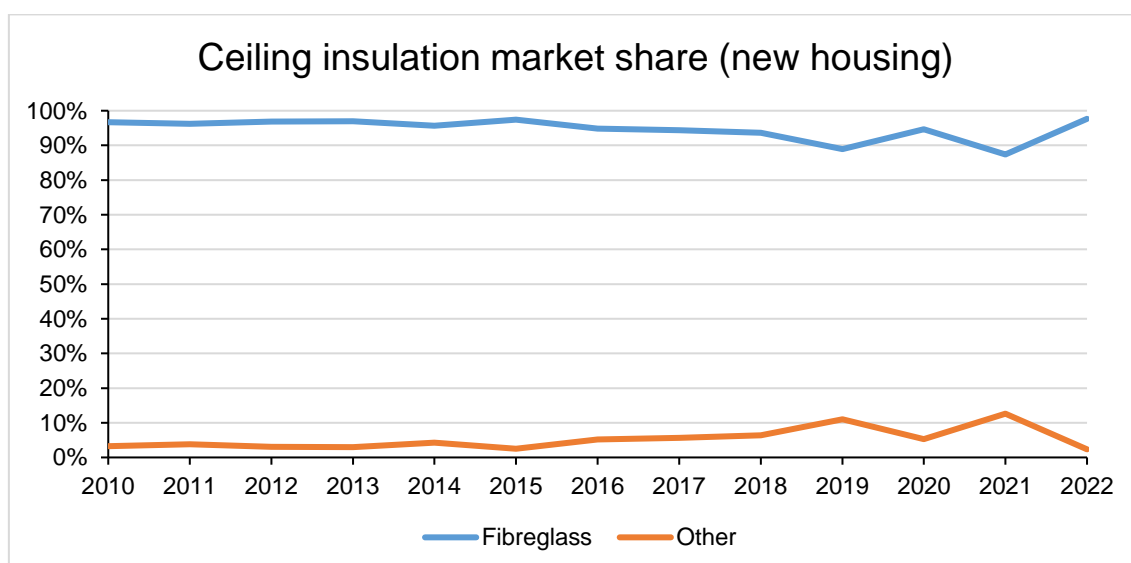


Figure 9. Ceiling insulation market share.

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.

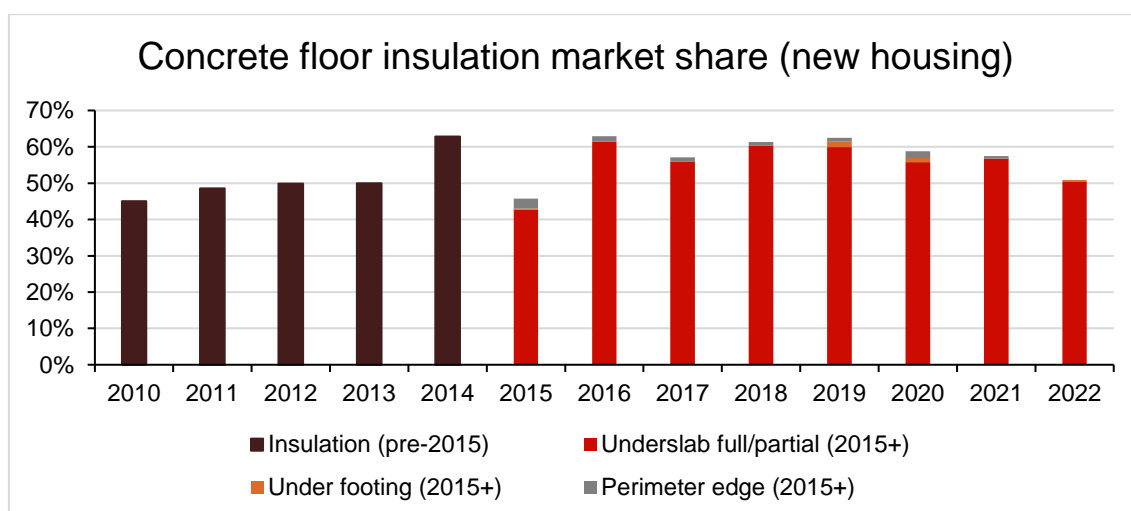


Figure 10. Concrete slab insulation.

Timber subfloors are much less common than concrete slabs in new housing so 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 2018–2022 following a ban in 2016² and a trend of steady decline since 2014.

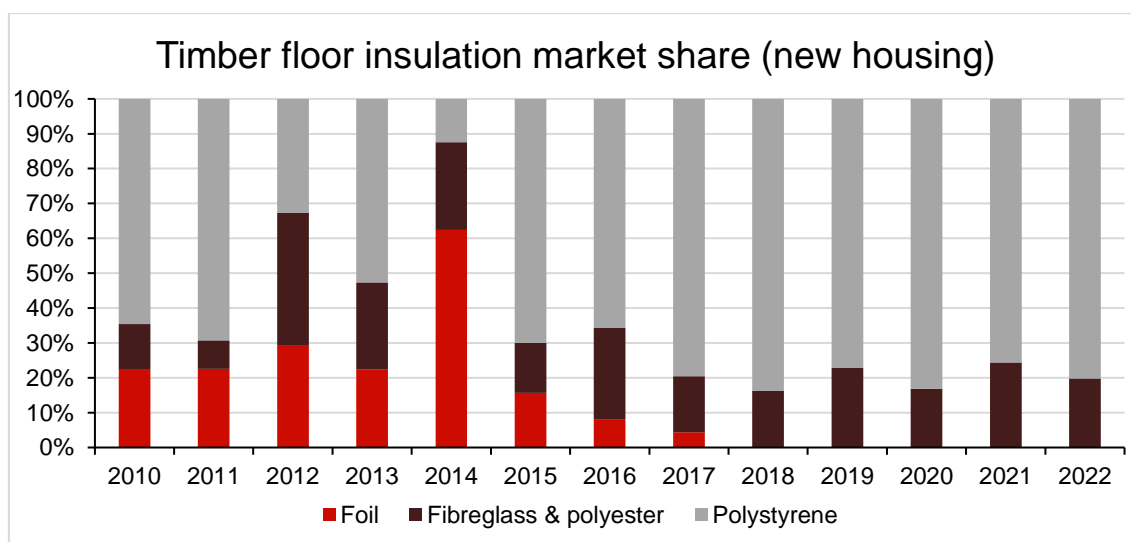


Figure 11. Timber floor insulation market share.

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

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 <input type="text"/> in this consent.					Contract value of work (incl sub-trades) \$ ind GST.																																												
Floor areas Total floor area <input type="text"/> Sq metres (include attached garage, exclude decks).																																																	
<table border="0" style="width:100%"> <tr> <td></td> <td>Particleboard</td> <td>Plywood</td> <td colspan="2">Strip timber (not overlay, exclude decks).</td> <td>Concrete</td> <td colspan="4"></td> </tr> <tr> <td>Ground level</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td colspan="4"></td> </tr> <tr> <td>First level</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td colspan="4"></td> </tr> <tr> <td>2nd or more levels</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td><input type="text"/> Sq metres</td> <td colspan="4"></td> </tr> </table>											Particleboard	Plywood	Strip timber (not overlay, exclude decks).		Concrete					Ground level	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres					First level	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres					2nd or more levels	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres				
	Particleboard	Plywood	Strip timber (not overlay, exclude decks).		Concrete																																												
Ground level	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres																																												
First level	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres																																												
2nd or more levels	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres	<input type="text"/> Sq metres																																												
Decks (above ground, not concrete patios) (circle one) Includes a deck? Yes / No (circle one or more) Deck area <input type="text"/> Sq metres 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 <input type="checkbox"/> Steel <input type="checkbox"/> Douglas fir <input type="checkbox"/> Concrete block <input type="checkbox"/> Other <input type="checkbox"/> (state) Was the wall framing precut or pre-nailed? Yes / No (circle one)																																																	
Framing timber treatment Untreated kiln dry <input type="checkbox"/> Untreated wet <input type="checkbox"/> H1.2 <input type="checkbox"/> T1.2 (orange) <input type="checkbox"/> H3.1 <input type="checkbox"/> Tick one or more State where used (eg outer walls, sub floor, etc)																																																	
Floor joists Tick one or more: None <input type="checkbox"/> Solid timber <input type="checkbox"/> Posistrut <input type="checkbox"/> Hybeam (I beam) <input type="checkbox"/> Steel <input type="checkbox"/> Twinaplate <input type="checkbox"/> Origin (I beam) <input type="checkbox"/> Other (state) <input type="checkbox"/> Joist depth mmmmmmmmmmmmmmmmmmmm																																																	
Insulation (tick one or more) Wall insulation: R-value <input type="text"/> Pink Batts <input type="checkbox"/> Bradford Gold <input type="checkbox"/> Premier Fibreglass <input type="checkbox"/> Blown FG Roofwool <input type="checkbox"/> Greenstuf (polyester) <input type="checkbox"/> Other polyester <input type="checkbox"/> Treated paper <input type="checkbox"/> Wool <input type="checkbox"/> Other (state) <input type="checkbox"/> Ceiling insulation: R-value <input type="text"/> Pink Batts <input type="checkbox"/> Bradford Gold <input type="checkbox"/> Premier Fibreglass <input type="checkbox"/> Blown FG Roofwool <input type="checkbox"/> Greenstuf (polyester) <input type="checkbox"/> Other polyester <input type="checkbox"/> Treated paper <input type="checkbox"/> Wool <input type="checkbox"/> Other (state) <input type="checkbox"/> Floor insulation: R-value <input type="text"/> Expol Warmflex <input type="checkbox"/> Polystyrene panel <input type="checkbox"/> Cosy Floor <input type="checkbox"/> Sisalation Foil <input type="checkbox"/> Other (state) <input type="checkbox"/> Installer (name)																																																	
Noise Control (circle one) Have you installed noise control products? Yes / No What type?																																																	
Building wraps Roof wrap: Flametop <input type="checkbox"/> Thermakraft <input type="checkbox"/> Bitumac <input type="checkbox"/> GIB underlay <input type="checkbox"/> Greencap <input type="checkbox"/> Pauloid <input type="checkbox"/> Black Paper <input type="checkbox"/> Other (state) <input type="checkbox"/> Wall wrap: Flametop <input type="checkbox"/> Tyvek <input type="checkbox"/> Thermakraft coverup <input type="checkbox"/> Framagard II <input type="checkbox"/> Greenwrap <input type="checkbox"/> Fastwrap <input type="checkbox"/> Black Paper <input type="checkbox"/> Other (state) <input type="checkbox"/>																																																	
Wall cladding State type (and approx % wall coverage) Type % area eg fibre cement sheet 75% also plywood, solid plaster (min 18mm). Type % area daybrick, 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 <input type="checkbox"/> BGC <input type="checkbox"/> CSR <input type="checkbox"/> PRMA <input type="checkbox"/> Other <input type="checkbox"/> 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, pre-painted corrugated, other steel profiles, concrete tiles, butyl asphalt shingles, fibreglass shingles, etc.																																																	
Wet wall linings (Tick one or more in each row) Bathroom: Formica Aquapanel <input type="checkbox"/> Seratone <input type="checkbox"/> Villa board <input type="checkbox"/> Hardies <input type="checkbox"/> Hardiglaze <input type="checkbox"/> Standard GB <input type="checkbox"/> GIB Aqualine <input type="checkbox"/> Other (state) <input type="checkbox"/> Laundry: Formica Aquapanel <input type="checkbox"/> Seratone <input type="checkbox"/> Villa board <input type="checkbox"/> Hardies <input type="checkbox"/> Hardiglaze <input type="checkbox"/> Standard GB <input type="checkbox"/> GIB Aqualine <input type="checkbox"/> Other (state) <input type="checkbox"/> Is fibre cement sheet flooring underlay used in the bathroom or laundry? Yes/ No (circle one).																																																	
Energy efficiency Tick if any of the following are being installed: Double glazing <input type="checkbox"/> Solar water heaters <input type="checkbox"/> Dual flush toilets <input type="checkbox"/> efficient lights <input type="checkbox"/> Energy Heat pump <input type="checkbox"/> Low flow showers <input type="checkbox"/> Built-in window vents <input type="checkbox"/>																																																	
Type of Builder How many houses or dwelling units does your company build 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 <input type="checkbox"/> 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 <input type="checkbox"/>		West <input type="checkbox"/>		South <input type="checkbox"/>
					East <input type="checkbox"/>				
What is the wind zone (tick one box)					Low <input type="checkbox"/>		Medium <input type="checkbox"/>		High <input type="checkbox"/>
					Very High <input type="checkbox"/>				
Wall Framing (tick appropriate box)									
Radiata <input type="checkbox"/>		Steel <input type="checkbox"/>		Douglas fir <input type="checkbox"/>		Concrete block <input type="checkbox"/>		Solid wood <input type="checkbox"/>	
Other <input type="checkbox"/>		(state)							
Was the wall framing precut or prenailed? Yes / No (circle one)									
Stud size and spacing (tick one or more)									
90x45 mm @600ctrs <input type="checkbox"/>		90x40 mm @600ctrs <input type="checkbox"/>		90x45 mm @400ctrs <input type="checkbox"/>		140x45 mm @600ctrs <input type="checkbox"/>		140x45 mm @400ctrs <input type="checkbox"/>	
Other (please state)									
Heating Systems Tick one or more									
Heat pump <input type="checkbox"/>		Wood/Pellet burner <input type="checkbox"/>		Ducted central heating (Not including DVS or HRV) <input type="checkbox"/>		Underfloor heating (waterpipe) <input type="checkbox"/>		Underfloor heating (electric) <input type="checkbox"/>	
DVS/HRV <input type="checkbox"/>		Gas <input type="checkbox"/>							
Floor joists									
None <input type="checkbox"/>		Solid timber <input type="checkbox"/>		Posistrut <input type="checkbox"/>		Hyjoist <input type="checkbox"/>		Steel <input type="checkbox"/>	
Twinaplate <input type="checkbox"/>		Hyne (I beam) <input type="checkbox"/>		lumberworX <input type="checkbox"/>		Other (state) <input type="checkbox"/>			
Joist depth .....mm		.....mm		.....mm		.....mm		.....mm	
Insulation (tick one or more)									
Insulation R value		Pink Batts <input type="checkbox"/>		Bradford Gold <input type="checkbox"/>		Premier Fibreglass <input type="checkbox"/>		Blown FG Rocwool <input type="checkbox"/>	
Greenstuf (polyester) <input type="checkbox"/>		Other polyester <input type="checkbox"/>		Wool <input type="checkbox"/>		Polystyrene <input type="checkbox"/>		Other (state) <input type="checkbox"/>	
Wall insulation R - <input type="checkbox"/>									
Ceiling insulation R - <input type="checkbox"/>									
Floor insulation R - <input type="checkbox"/>									
Insulation Installer (name) Please tick		Builder <input type="checkbox"/>		Other, please specify <input type="checkbox"/>					
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 <input type="checkbox"/>		Gib Noiseline <input type="checkbox"/>		Other Gib Products <input type="checkbox"/>	
				Bradford Gold <input type="checkbox"/>		Pink Batts <input type="checkbox"/>		Polyester <input type="checkbox"/>	
				Other Specify <input type="checkbox"/>					
Building wraps									
Roof wrap		Flamestop <input type="checkbox"/>		Thermakraft <input type="checkbox"/>		Bitumac <input type="checkbox"/>		CoverTek <input type="checkbox"/>	
		Pauloid <input type="checkbox"/>		Black Paper <input type="checkbox"/>		Other (state) <input type="checkbox"/>		Diflex 130 <input type="checkbox"/>	
		Tektan <input type="checkbox"/>							
(tick one or more) Wall wrap		Flamestop <input type="checkbox"/>		Tyvek <input type="checkbox"/>		Thermakraft <input type="checkbox"/>		Framegard <input type="checkbox"/>	
		Home RAB <input type="checkbox"/>		Fastwrap <input type="checkbox"/>		Black Paper <input type="checkbox"/>		Other (state) <input type="checkbox"/>	
		Diflex 130 <input type="checkbox"/>		Tektan <input type="checkbox"/>					
DPC									
What DPC products have you installed?		Damp-a-thene <input type="checkbox"/>		Mathiod <input type="checkbox"/>		Supercourse <input type="checkbox"/>		Other, specify <input type="checkbox"/>	
Flashing Tapes									
Weatherseal <input type="checkbox"/>		Aluband <input type="checkbox"/>		Tyvek Flexwrap <input type="checkbox"/>		Protectowrap <input type="checkbox"/>		Frameflash <input type="checkbox"/>	
Other, specify <input type="checkbox"/>									
Wall cladding State type (and approx % wall coverage)									
Type		% area		eg fibre cement sheet, 75%		also plywood, solid plaster(min 18mm),			
Type		% area		clay brick, 15%		plaster on polystyrene, concrete			
Type		% area		cedar 10%		block, PVC weatherboard, etc.			
If Fibre Cement cladding is used, who is the Manufacturer? (tick one or more)									
Hardies <input type="checkbox"/>		BGC <input type="checkbox"/>		CSR <input type="checkbox"/>		PRIMA <input type="checkbox"/>		Other <input type="checkbox"/>	
Eterpan <input type="checkbox"/>									
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, pre-painted corrugated, other steel profiles, concrete tiles, butyl, asphalt shingles, fibreglass shingles, etc.									
If roof is metal tiles, specify Manufacturer name									
Greater/equal than 12 degrees <input type="checkbox"/> less than 12 degrees <input type="checkbox"/> Don't know <input type="checkbox"/>									
Is the Majority of the roof slope? (tick one)									
Wet wall linings (Tick one or more in each row)									
Bathroom		Formica Aquapanel <input type="checkbox"/>		Seratone <input type="checkbox"/>		Villaboard <input type="checkbox"/>		Hardies <input type="checkbox"/>	
		Standard GIB <input type="checkbox"/>		Aqualine <input type="checkbox"/>		Other, specify <input type="checkbox"/>		Timber <input type="checkbox"/>	
		Horizon <input type="checkbox"/>							
Laundry		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
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 <input type="text"/>				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 <input type="text"/> Sq metres (include attached garage, exclude decks).																																					
<table border="1"> <thead> <tr> <th></th> <th>Partideboard</th> <th>Plywood</th> <th>Strip timber (not overlay)</th> <th>Strandboard</th> <th>Concrete</th> <th>Height of level to ceiling</th> </tr> </thead> <tbody> <tr> <td>Ground level</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> metres</td> </tr> <tr> <td>First level</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> metres</td> </tr> <tr> <td>2nd or more levels</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> Sq m</td> <td><input type="text"/> metres</td> </tr> </tbody> </table>											Partideboard	Plywood	Strip timber (not overlay)	Strandboard	Concrete	Height of level to ceiling	Ground level	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> metres	First level	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> metres	2nd or more levels	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> metres
	Partideboard	Plywood	Strip timber (not overlay)	Strandboard	Concrete	Height of level to ceiling																															
Ground level	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> metres																															
First level	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> metres																															
2nd or more levels	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> Sq m	<input type="text"/> metres																															
Wall Framing (tick appropriate box) Radiata <input type="checkbox"/> Steel <input type="checkbox"/> Douglas Fir <input type="checkbox"/> Concrete Block <input type="checkbox"/> Solid Wood <input type="checkbox"/> Other <input type="text"/> (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 <input type="checkbox"/> 4-6 months <input type="checkbox"/> 7-9 months <input type="checkbox"/> 10-12 months <input type="checkbox"/> Over 12 months <input type="checkbox"/>																																					
Floor Joists (tick one or more) None <input type="checkbox"/> Solid Timber <input type="checkbox"/> Posistrut <input type="checkbox"/> Hyjoist <input type="checkbox"/> Steel <input type="checkbox"/> Twinaplate <input type="checkbox"/> Hyne (I beam) <input type="checkbox"/> LumberworX <input type="checkbox"/> Other state <input type="text"/> Joist depth: <input type="text"/> mm <input type="text"/> mm <input type="text"/> mm <input type="text"/> mm <input type="text"/> mm <input type="text"/> mm <input type="text"/> mm <input type="text"/> mm																																					
Insulation (tick one or more) Insulation R Value <input type="text"/> Wall insulation <input type="text"/> R- Ceiling insulation <input type="text"/> R- Is the floor insulated? (circle one) Yes / No If yes, what floor insulation was used? Concrete slab insulation: Underslab full/partial <input type="checkbox"/> Perimeter edge <input type="checkbox"/> Under footing <input type="checkbox"/> Timber sub-floor insulation: Polystyrene <input type="checkbox"/> Polyester <input type="checkbox"/> Glasswool <input type="checkbox"/> Foil <input type="checkbox"/> Floor insulation <input type="text"/> R- Insulation Installer (name) <input type="text"/> Builder <input type="checkbox"/> Other (please specify) <input type="text"/>																																					
Noise Control Have you installed noise control products? (circle one) Yes / No If so, then what type? (tick all that apply) Pink Batts <input type="checkbox"/> GIB <input type="checkbox"/> Other GIB <input type="checkbox"/> Bradford Gold <input type="checkbox"/> Pink Batts <input type="checkbox"/> Polyester <input type="checkbox"/> Silencer <input type="checkbox"/> Noiseline <input type="checkbox"/> Products <input type="checkbox"/> Other (please specify) <input type="text"/>																																					
Building Wraps Roof Wrap: Flamestop <input type="checkbox"/> Bitumac <input type="checkbox"/> Tyvek Supro <input type="checkbox"/> CoverTek <input type="checkbox"/> Thermakraft <input type="checkbox"/> Fastwrap <input type="checkbox"/> Pauloid <input type="checkbox"/> Other (state) <input type="text"/> Wall Wrap: Bitumac <input type="checkbox"/> Tyvek Homewra <input type="checkbox"/> Watergate <input type="checkbox"/> Covertek <input type="checkbox"/> Thermakraft <input type="checkbox"/> Tekton <input type="checkbox"/> Fastwrap <input type="checkbox"/> Pauloid <input type="checkbox"/> Ecoply Barrier <input type="checkbox"/> Other (state) <input type="text"/>																																					
DPC What DPC products have you installed? Damp-a-thene <input type="checkbox"/> Malthoid <input type="checkbox"/> Supercourse <input type="checkbox"/> Other, Specify: <input type="text"/>																																					
Flashing Tapes What flashing tapes are installed? Bulldog <input type="checkbox"/> Aluband <input type="checkbox"/> Tyvek Flexwrap <input type="checkbox"/> Protectowrap <input type="checkbox"/> Frameflash <input type="checkbox"/> Other, Specify: <input type="text"/>																																					
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 <input type="text"/> % area <input type="text"/> Type <input type="text"/> % area <input type="text"/> Type <input type="text"/> % area <input type="text"/> 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, pre-painted corrugated, trough zincalum, corrugated zincalum, other steel profiles, concrete tiles, asphalt shingles, butyl, other (state) <input type="text"/>																																					
Spouting What profile is the SPOUTING? 1/4 round/quad <input type="checkbox"/> 1/2 round <input type="checkbox"/> Old gothic <input type="checkbox"/> Box <input type="checkbox"/> Other (state) <input type="text"/> What material is the SPOUTING? PVC (White) <input type="checkbox"/> PVC (Colour) <input type="checkbox"/> Steel <input type="checkbox"/> Aluminium <input type="checkbox"/> Copper <input type="checkbox"/> Other (state) <input type="text"/> Who installed the SPOUTING? Roofer <input type="checkbox"/> Spouting installer <input type="checkbox"/> Builder <input type="checkbox"/> Plumber <input type="checkbox"/> Other (state) <input type="text"/>																																					
Downpipes What profile are the DOWNPIPES? 65mm round <input type="checkbox"/> 80mm round <input type="checkbox"/> 100mm round <input type="checkbox"/> 65x50mm rectangular <input type="checkbox"/> 100x50mm rectangular <input type="checkbox"/> Other (state) <input type="text"/> What material are the DOWNPIPES? PVC (White) <input type="checkbox"/> PVC (Colour) <input type="checkbox"/> Steel <input type="checkbox"/> Aluminium <input type="checkbox"/> Copper <input type="checkbox"/> Other (state) <input type="text"/> Who installed the DOWNPIPES? Roofer <input type="checkbox"/> Spouting installer <input type="checkbox"/> Builder <input type="checkbox"/> Plumber <input type="checkbox"/> Other (state) <input type="text"/>																																					
Wet Wall Linings (tick one or more in each row) Bathroom: Formica Aquapanel <input type="checkbox"/> Seratone <input type="checkbox"/> Villaboard <input type="checkbox"/> Hardies <input type="checkbox"/> Standard <input type="checkbox"/> GIB <input type="checkbox"/> Aqualine <input type="checkbox"/> WaterShield <input type="checkbox"/> Other specify <input type="text"/> Timber <input type="checkbox"/> Horizon <input type="checkbox"/> Laundry: Formica Aquapanel <input type="checkbox"/> Seratone <input type="checkbox"/> Villaboard <input type="checkbox"/> Hardies <input type="checkbox"/> Standard <input type="checkbox"/> GIB <input type="checkbox"/> Aqualine <input type="checkbox"/> WaterShield <input type="checkbox"/> Other specify <input type="text"/> Timber <input type="checkbox"/> Horizon <input type="checkbox"/>																																					
Wall Linings (excluding wet walls) Elephant Plasterboard <input type="checkbox"/> GIB Plasterboard <input type="checkbox"/> Knauf Plasterboard <input type="checkbox"/> Other (state) <input type="text"/>																																					
Ceiling Linings and Battens Ceiling Linings (tick one or more) 10mm plasterboard <input type="checkbox"/> 13mm plasterboard <input type="checkbox"/> Ultralite <input type="checkbox"/> Tiles <input type="checkbox"/> Other <input type="text"/> Ceiling Battens (circle one): timber or metal Are there any downlights recessed in to ceiling? Yes / No (circle one) IF YES, how many? <input type="text"/>																																					
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 2006-2022															
	2006	2007	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sheet metal	44.7%	54.2%	53.8%	53.9%	49.6%	52.6%	54.0%	54.9%	56.1%	55.2%	69.5%	70.8%	70.7%	69.8%	64.6%
Tiles (metal and concrete)	41.3%	36.9%	38.6%	41.6%	42.1%	35.4%	37.6%	38.8%	31.7%	30.6%	24.3%	17.6%	25.3%	22.4%	25.7%
Other (membrane, plastic, etc)	14.0%	8.8%	7.6%	4.5%	8.3%	12.0%	8.4%	6.2%	12.2%	14.1%	6.1%	11.7%	3.9%	7.8%	9.7%
TOTAL	100%	100%	100%	100%	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 2006-2022													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Finish bricks clay & concrete	46%	44%	44%	47%	38%	38%	35%	31%	28%	25%	22%	37%	27%
Weatherboard (timber, fib cmt, PVC)	28%	31%	31%	32%	34%	37%	39%	42%	42%	44%	42%	26%	44%
Other (aerated concrete, FC sheet, plywood, EIFS, stucco, sheet steel etc)	26%	25%	24%	21%	28%	26%	26%	27%	30%	32%	36%	37%	29%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.													

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 2010-2022													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Timber (framing + solid timber)	90.4%	84.7%	87.8%	95.0%	94.4%	93.1%	92.7%	90.2%	93.9%	85.8%	87.8%	85.9%	90.8%
Other (steel framing, concrete masonry, polybloc, earth, etc)	9.6%	15.3%	12.2%	5.0%	5.6%	6.9%	7.3%	9.8%	6.1%	14.2%	12.2%	14.1%	9.2%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.													

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 2010-2022													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Concrete	81.0%	79.7%	80.4%	79.6%	77.6%	76.0%	77.1%	74.4%	69.6%	64.3%	66.2%	66.9%	63.8%
All other flooring	19.0%	20.3%	19.6%	20.4%	22.4%	23.5%	22.9%	25.3%	30.4%	35.7%	33.8%	33.1%	36.2%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.													

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 2010-2022													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Solid timber	68.4%	74.0%	79.0%	62.0%	71.2%	73.9%	75.1%	77.3%	73.3%	54.8%	74.7%	69.1%	69.9%
Other (steel, proprietary systems)	31.6%	26.0%	21.0%	38.0%	28.8%	26.1%	24.9%	22.7%	26.7%	45.2%	25.3%	30.9%	30.1%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: percentage weighted to allow for the regional building activity.													

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

Table 6. Wall insulation market share.

Wall insulation market share in new housing													
Yearly Data 2010-2022													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fibreglass	95.4%	95.5%	96.1%	95.0%	95.7%	95.1%	93.1%	92.1%	91.3%	91.9%	88.2%	83.6%	95.0%
Other	4.6%	4.5%	3.9%	5.0%	4.3%	4.9%	6.9%	7.9%	8.7%	8.1%	11.8%	16.4%	5.0%
TOTAL	100%	100%	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 2010-2022													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Fibreglass	96.7%	96.2%	96.9%	97.0%	95.7%	97.5%	94.8%	94.4%	93.6%	89.0%	94.7%	87.4%	98.3%
Other	3.3%	3.8%	3.1%	3.0%	4.3%	2.5%	5.2%	5.6%	6.4%	11.0%	5.3%	12.6%	1.7%
TOTAL	100%	100%	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 2010-2022													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Insulation (pre-2015)	45.0%	48.6%	49.8%	50.0%	62.8%								
Underslab full/partial (2015+)						42.7%	61.5%	55.9%	60.3%	59.9%	55.8%	56.8%	50.3%
Under footing (2015+)						0.3%	0.0%	0.0%	0.0%	1.5%	1.2%	0.0%	0.5%
Perimeter edge (2015+)						2.7%	1.4%	1.2%	1.0%	1.0%	1.9%	0.7%	0.0%
TOTAL	45.0%	48.6%	49.8%	50.0%	62.8%	45.7%	62.9%	57.1%	61.3%	62.5%	58.8%	57.4%	50.8%
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 2010-2022													
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Foil	22.3%	22.6%	29.2%	22.5%	62.4%	15.7%	8.1%	4.4%	0.2%	0.0%	0.0%	0.0%	0.0%
Fibreglass & polyester	13.1%	8.1%	38.1%	24.9%	25.1%	14.3%	26.3%	16.0%	16.1%	22.9%	16.9%	24.4%	19.8%
Polystyrene	64.6%	69.3%	32.7%	52.7%	12.4%	70.0%	65.6%	79.5%	83.7%	77.1%	83.1%	75.6%	80.2%
TOTAL	100%	100%	100%	100%	100%	100%	100%	80%	100%	100%	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 2006-2022																
	2006	2007	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Survey responses	221.3	232.1	232.6	217.0	213.7	208.2	203.0	213.9	199.8	200.5	192.2	195.8	194.5	185.0	185.8	189.5
Consent data (1)	215.2	213.4	215.8	215.6	210.6	214.3	212.9	212.8	208.6	208.7	207.2	201.4	194.1	199.5	200.7	199.4
Note: survey average floor area weighted to allow for regional building activity																
(1) Source: Statistics New Zealand																