

Physical characteristics of new non-residential buildings 2021

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Preface

This is the seventh annual report providing the results of the BRANZ Non-Residential Survey. BRANZ surveys builders and designers of non-residential buildings on the physical characteristics of the building. The purpose is to obtain data on non-residential buildings that is not available from official sources. This data includes what type of materials are used. The data is useful for studies in the fields of sustainability, energy efficiency, durability and engineering.

Acknowledgements

This work was funded by the Building Research Levy. 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 non-residential buildings 2021

BRANZ Study Report SR496

Authors

Claire Clarke and Orin Lockyer

Reference

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Abstract

Official data on the characteristics of non-residential buildings is limited. Building consent data held by Stats NZ gives numbers by building type, value and floor area, aggregated into territorial authorities and regions. However, there is no data on materials used.

BRANZ began surveying builders and designers in 1998 to obtain data on materials used. We have since compiled a database of approximately 400 non-residential buildings per year containing information on the materials used by building component.

This report contains the results of these surveys on the materials used in new non-residential buildings. 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 about 2,000 non-residential buildings per year in the BRANZ Non-Residential Survey. The survey also collects a variety of data on materials used in new and altered residential buildings.

The survey is a postal survey to the builder or designer identified on the building consent application form, and the questions relate to each individual consent. Generally, 400 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 non-residential buildings 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 the share of building activity for each building type in the calculation of the market share. This prevents some building types (such as farm buildings) from having a disproportionate share of the total market share should BRANZ receive a larger number of surveys returns of one building type.

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
- main structure
- partition wall framing
- wall infill framing
- wall insulation
- ceiling insulation
- floor 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.

The value of new non-residential consents is presented in

Figure 1 broken down into three different building types – institutional, commercial and industrial.

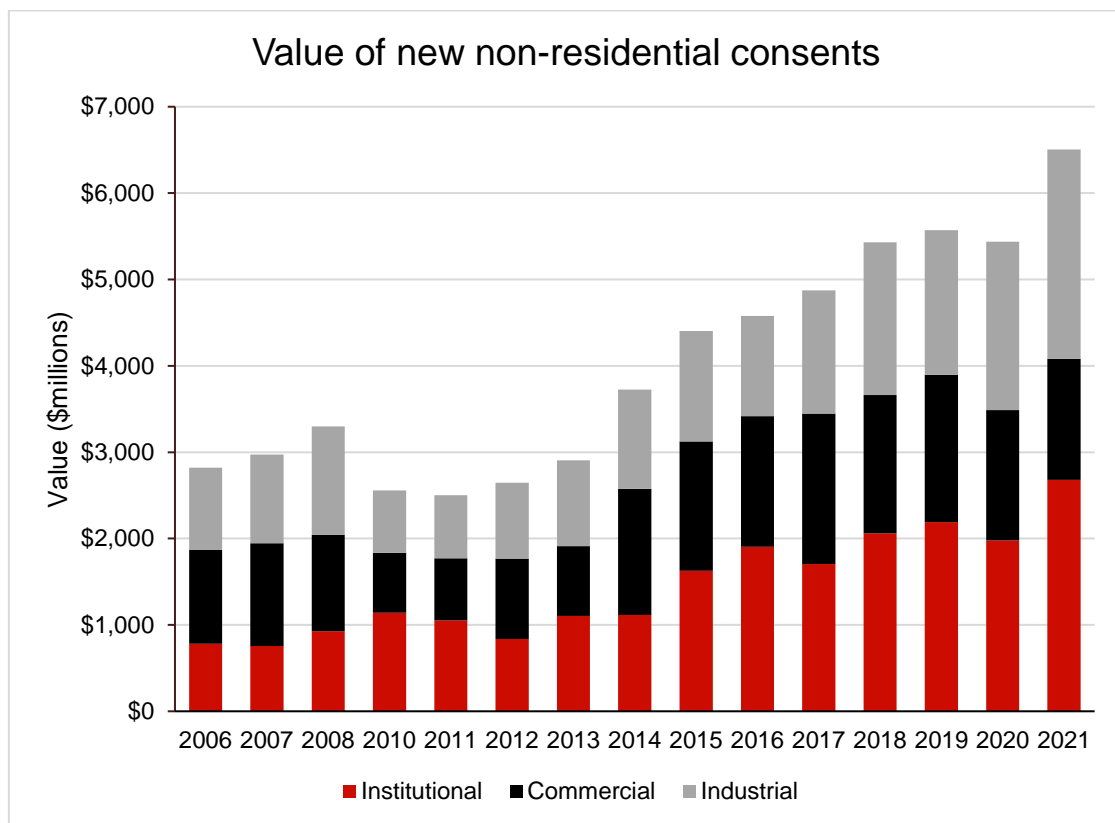


Figure 1. Value of new non-residential consents.

2. Summary

In general, many of the market shares of materials have been relatively steady over the years surveyed.

Sheet metal is the most popular roof cladding material (Figure 2). Steel, aluminium and other metals are the dominant wall cladding material due to their dominance on industrial and farm buildings (Figure 3). Concrete (mainly precast panels) tends to be variable. Steel remains the primary material for structural framing (Figure 4).

Timber remains the most common material for infill framing – the framing between the main structural elements (Figure 5). The market share of timber partition wall framing has decreased in 2021 (Figure 6). Steel's market share increased sharply from 29% in 2020 to 49% in 2021. Meanwhile, the market share of 'other' partition wall framing options, which consists of insulated panels and glazing, decreased slightly.

For insulation, fibreglass is once again the most dominant category. Polystyrene is still the most common insulation in insulated floors.

3. Main results

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

Due to the variations in the mix of buildings year to year, market shares can be highly variable. Therefore, changes in share may be due to a change of building types rather than a change in preference for any particular building material.

3.1 Roof claddings

Sheet metal is still the dominant roof cladding material for new non-residential buildings (Figure 2).

The 'other' category consists of membrane roofing, insulated panels and plastic film used on farm shelters. The 'other' category has increased from 17% in 2020 to 26% in 2021. Metal and concrete tiles are still relatively uncommon in non-residential buildings and barely feature in the 2021 results.

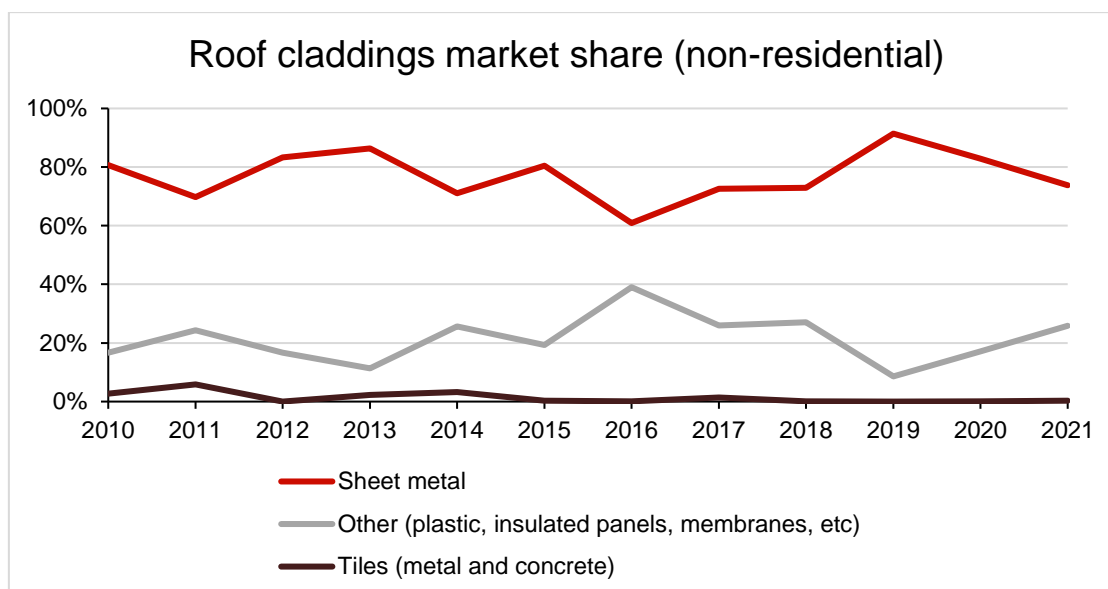


Figure 2. Roof claddings market share.

3.2 Wall claddings

Steel, aluminium and other metals are the dominant wall cladding material due to their overrepresentation in industrial and farm buildings (Figure 3).

Concrete (mainly precast panels) tends to be variable but has continued to drop since 2015. The 'other' category, which consists mainly of fibre cement products, increased in 2021 (Figure 3).

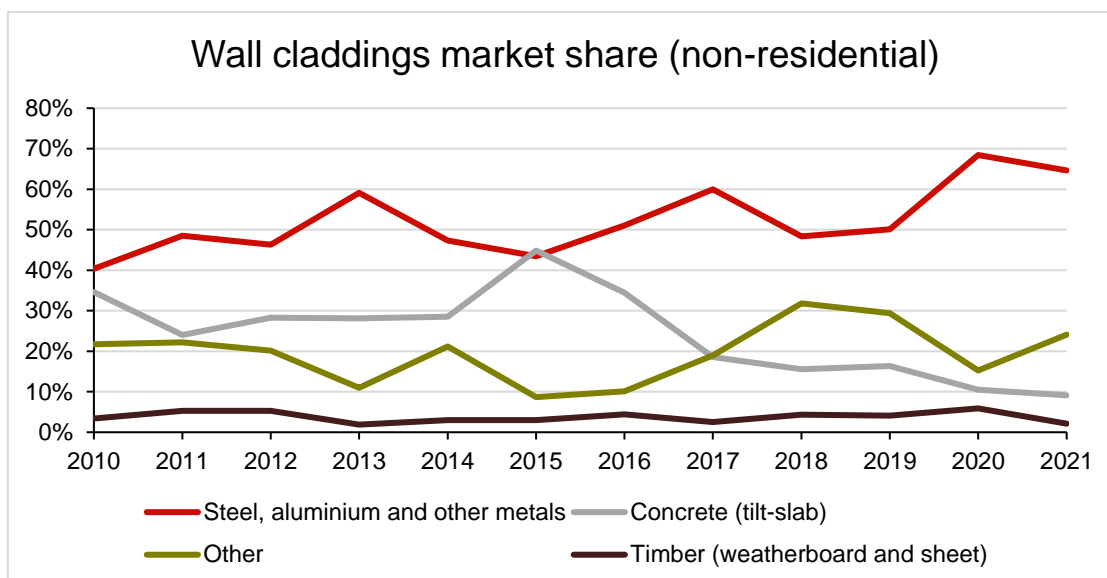


Figure 3. Wall claddings market share.

3.3 Main structure

Steel remains the most popular material for structural frames. The market share of steel has increased from 56% in 2020 to 74% in 2021 (Figure 4).

The market share of concrete, timber and 'other' framing decreased in 2021. The sharpest decline has been timber framing, going from a market share of 27% in 2020 to a 16% in 2021 (Figure 4)

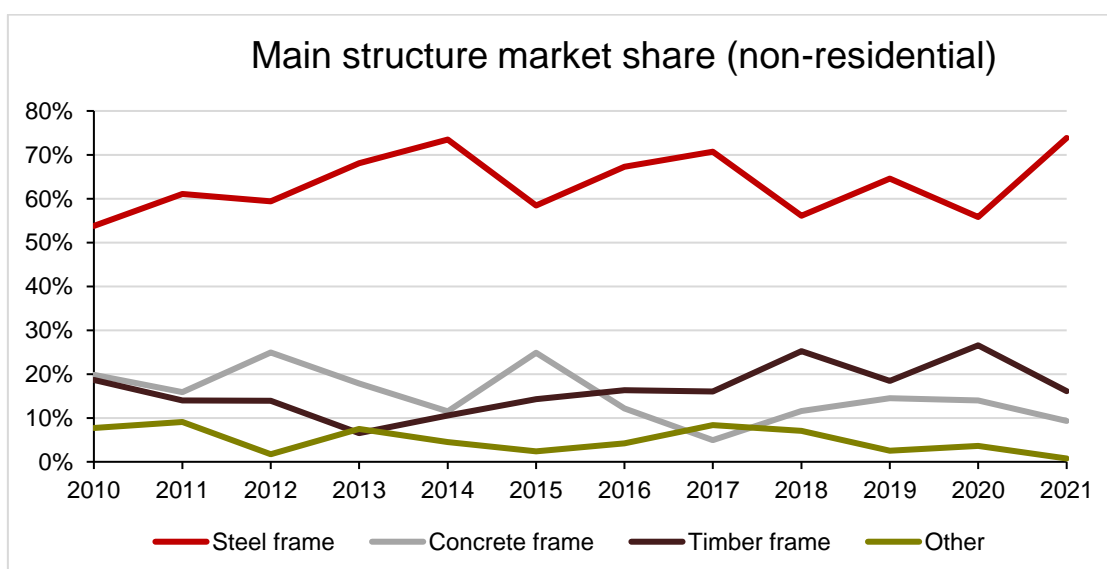


Figure 4. Main structure market share.

3.4 Wall infill framing

Wall infill framing is the framing between the main structural frames. Timber framing remains the predominant material type for this application (Figure 5). The market share of steel increased slightly in 2021. The market share of concrete has continued to decrease in 2021, while the 'other' category has remained the same. The 'other' category primarily consists of glazing.

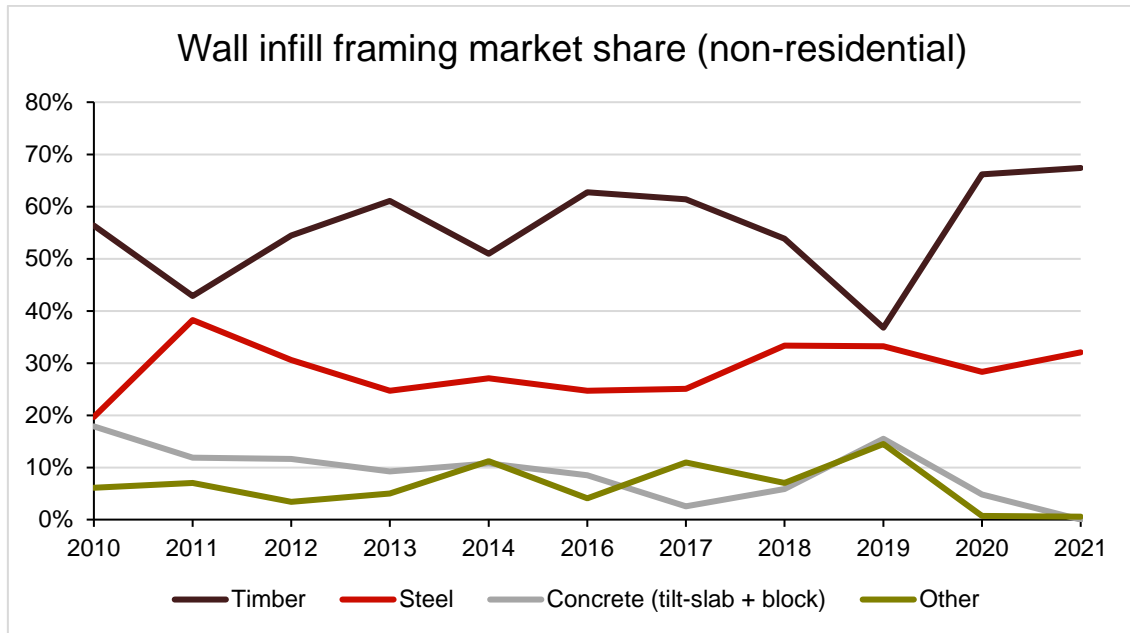


Figure 5. Wall infill framing market share.

3.5 Partition wall framing

Timber has decreased its market share for partition wall framing from 57% in 2020 to 42% in 2021. The market share of 'other' partition wall framing materials, which consists of insulated panels and glazing, has decreased from 14% in 2020 to 9% in 2021. The market share of steel increased significantly, going from 29% in 2020 to 49% in 2021 (Figure 6).

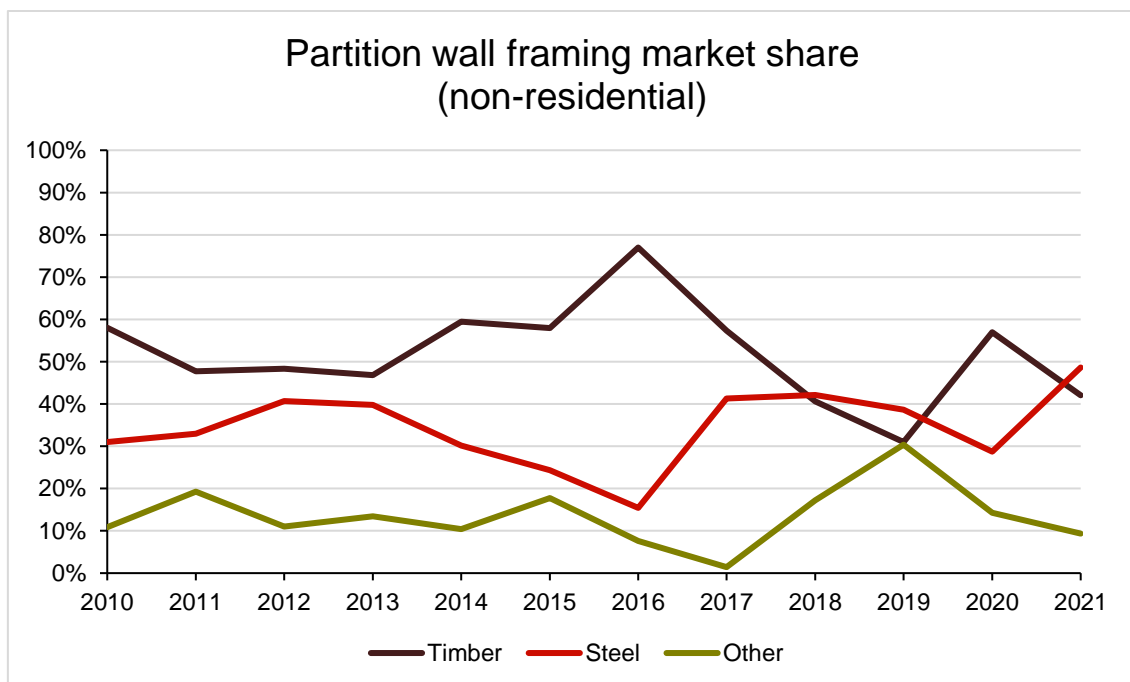


Figure 6. Partition wall framing market share.

3.6 Insulation

Wall insulation, ceiling insulation and floor insulation are dealt with separately in this section.

Farm buildings have not been included as it is uncommon for farm buildings to use insulation and they have a large share of the non-residential building market.

3.6.1 Wall insulation

Fibreglass has remained the dominant wall insulation material with a market share of 56% in 2021. However, this is a decrease from 68% the year prior (Figure 6). The 'polyester and other' category now has a market share of 44% in 2021.

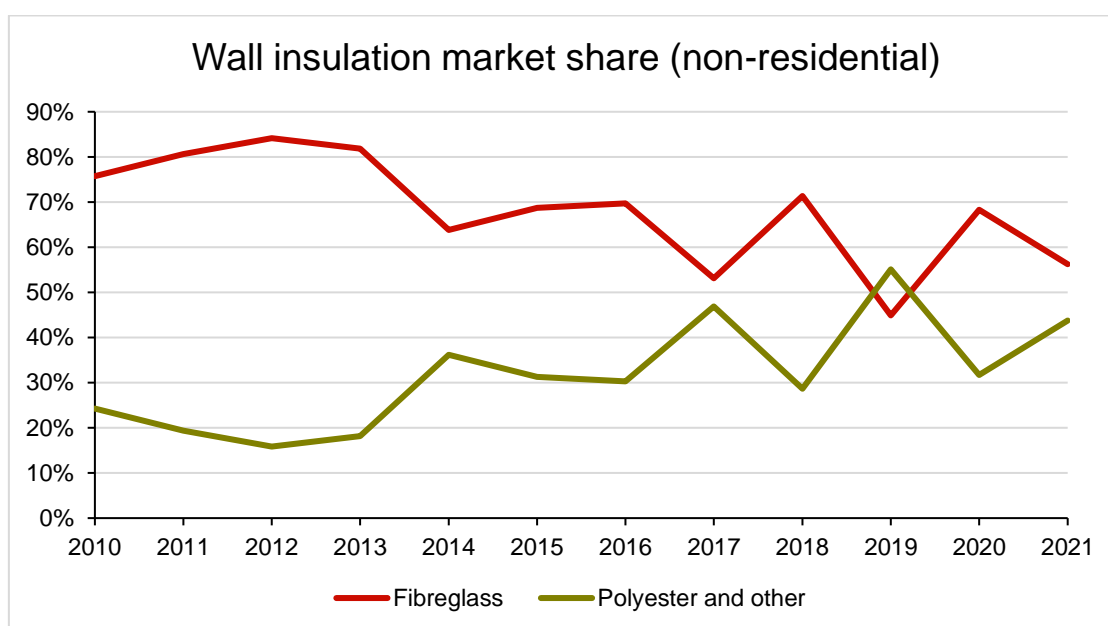


Figure 6. Wall insulation market share.

3.6.2 Ceiling insulation

Normally, most buildings use the same insulation material in the wall and ceiling, which means that market share in each market tends to follow the other.

While fibreglass remains the dominant insulation material, it has decreased from 76% in 2020 to 56% in 2021 with the 'polyester and other' category increasing to a similar level to 2015 (Figure 7).

'Other' primarily consists of polystyrene, which is common as part of insulated panels in industrial buildings.

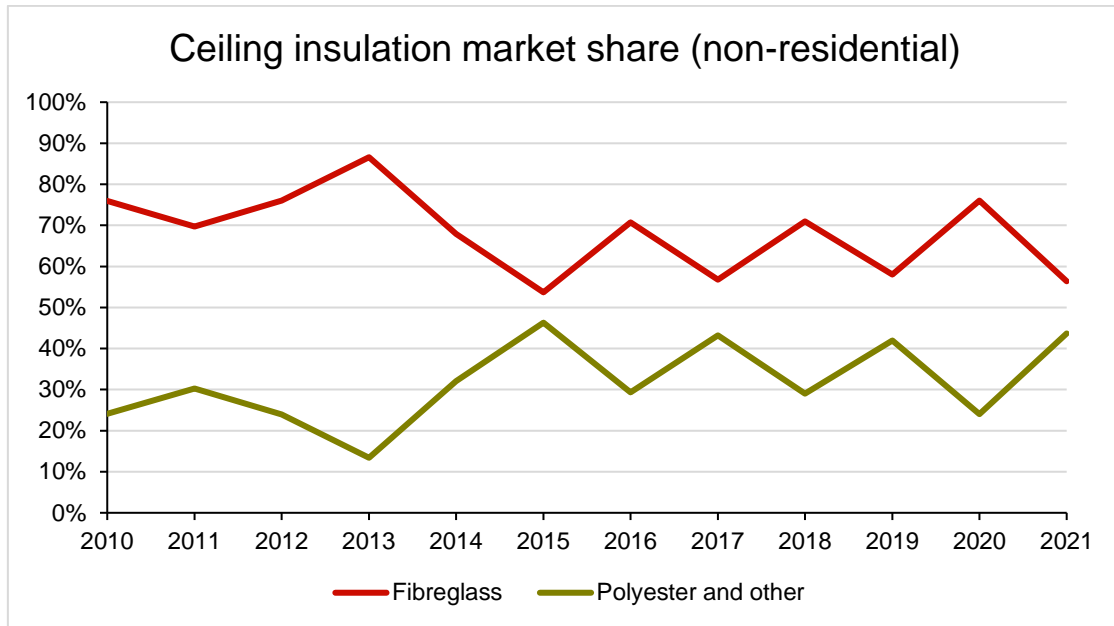


Figure 7. Ceiling insulation market share.

3.6.3 Floor insulation

For those buildings with floor insulation, sheet polystyrene is still the most common floor insulation material (Figure 8).

Note that the question on insulation of concrete slabs was changed in 2015. This chart assumes that all buildings that selected underslab full/partial used sheet polystyrene, although non-polystyrene waffle pod systems have entered the market. The market share of waffle pod, fibreglass and 'other' materials have increased significantly in 2021 (Figure 9).

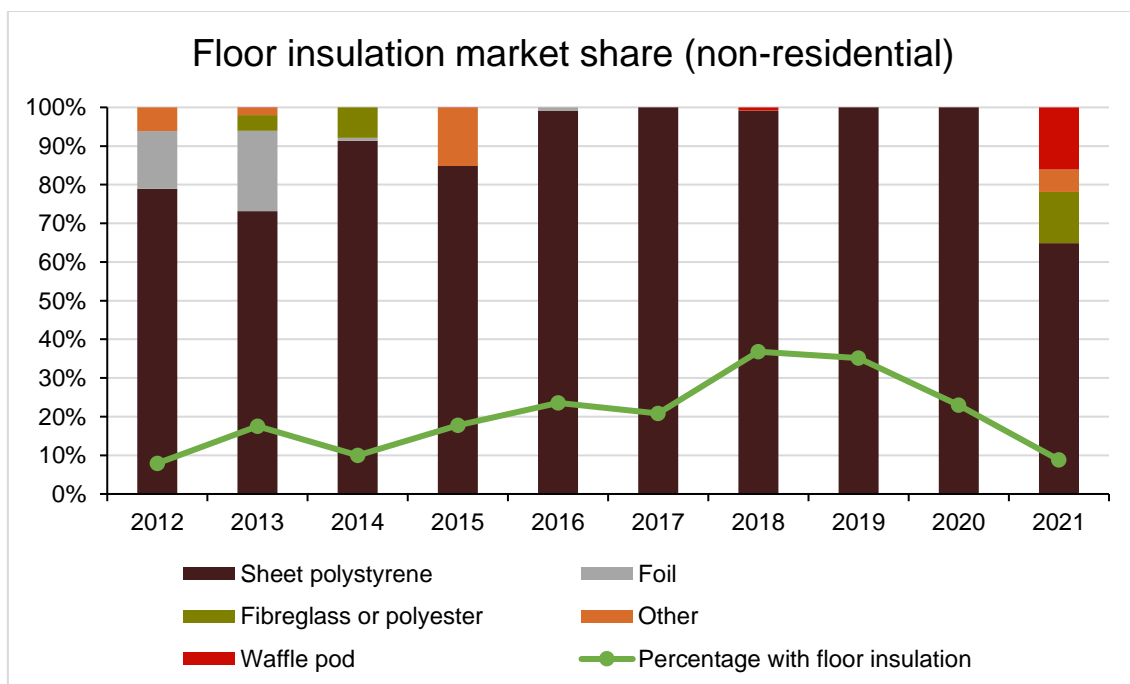


Figure 8. Floor insulation.

Appendix A: Tables of data and survey forms

A.1 Tables of data for the charts

Table 1. Roof claddings market share.

Roof claddings market share in new non-residential buildings												
Yearly data 2010-2021												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sheet metal	81%	70%	83%	86%	71%	80%	61%	73%	73%	91%	83%	74%
Tiles (metal and concrete)	3%	6%	0%	2%	3%	0%	0%	1%	0%	0%	0%	0%
Other (plastic, insulated panels, membranes, etc)	17%	24%	17%	11%	26%	19%	39%	26%	27%	9%	17%	26%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: Percentages weighted to allow for different building types												

Table 2. Wall claddings market share.

Wall claddings market share in new non-residential buildings												
Yearly data 2010-2021												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Steel, aluminium and other metals	40%	49%	46%	59%	47%	43%	51%	60%	48%	50%	68%	65%
Concrete (tilt-slab)	35%	24%	28%	28%	29%	45%	34%	19%	16%	16%	10%	9%
Timber (weatherboard and sheet)	3%	5%	5%	2%	3%	3%	4%	3%	4%	4%	6%	2%
Other	22%	22%	20%	11%	21%	9%	10%	19%	32%	29%	15%	24%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: Percentages weighted to allow for different building types												

Table 3. Main structure market share.

Main structure market share in new non-residential buildings												
Yearly data 2010-2021												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Concrete frame	20%	16%	25%	18%	11%	25%	12%	5%	12%	14%	14%	9%
Steel frame	54%	61%	59%	68%	73%	58%	67%	71%	56%	65%	56%	74%
Timber frame	19%	14%	14%	7%	11%	14%	16%	16%	25%	18%	27%	16%
Other	8%	9%	2%	8%	4%	2%	4%	8%	7%	3%	4%	1%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: Percentages weighted to allow for different building types												

Table 4. Wall infill framing market share.

Wall infill framing market share in new non-residential buildings												
Yearly data 2010-2021												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Timber	56%	43%	54%	61%	51%	49%	63%	61%	54%	37%	66%	67%
Concrete (tilt-slab + block)	18%	12%	12%	9%	11%	18%	9%	3%	6%	15%	5%	0%
Steel	20%	38%	31%	25%	27%	22%	25%	25%	33%	33%	28%	32%
Other	6%	7%	3%	5%	11%	11%	4%	11%	7%	14%	1%	1%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: Percentages weighted to allow for different building types. Does not include farm buildings												

Table 5. Partition wall framing market share.

Partition wall framing market share in new non-residential buildings															
Yearly data 2010-2021															
	2006	2007	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Steel	37%	36%	25%	31%	33%	41%	40%	30%	24%	15%	41%	42%	39%	29%	49%
Timber	56%	59%	50%	58%	48%	48%	47%	59%	58%	77%	57%	41%	31%	57%	42%
Other	7%	6%	25%	11%	19%	11%	13%	10%	18%	8%	1%	17%	30%	14%	9%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Note: Percentages weighted to allow for different building types

Table 6. Wall insulation market share.

Wall insulation market share in new non-residential buildings												
Yearly data 2010-2021												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fibreglass	76%	81%	84%	82%	64%	69%	70%	53%	71%	45%	68%	56%
Polyester and other	24%	19%	16%	18%	36%	31%	30%	47%	29%	55%	32%	44%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: Percentages weighted to allow for different building types												

Note: Percentages weighted to allow for different building types

Table 7. Ceiling insulation market share.

Ceiling insulation market share in new non-residential buildings												
Yearly data 2010-2021												
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fibreglass	76%	70%	76%	87%	68%	54%	71%	57%	71%	58%	76%	56%
Polyester and other	24%	30%	24%	13%	32%	46%	29%	43%	29%	42%	24%	44%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Note: Percentages weighted to allow for different building types												

Note: Percentages weighted to allow for different building types

Table 8. Floor insulation market share.

Floor insulation market share in new non-residential buildings										
Yearly data 2012-2021										
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Waffle pod	0%	0%	0%	0%	0%	0%	1%	0%	0%	18%
Sheet polystyrene	79%	73%	91%	85%	99%	100%	94%	100%	100%	73%
Foil	15%	21%	1%	0%	1%	0%	0%	0%	0%	0%
Fibreglass or polyester	0%	4%	8%	0%	0%	0%	0%	0%	0%	15%
Other	6%	2%	0%	15%	0%	0%	0%	0%	0%	6%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	113%
Percentage with floor insulation	8%	18%	10%	18%	24%	21%	37%	35%	23%	9%
Note: Percentages weighted to allow for different building types										

Note: Percentages weighted to allow for different building types

Table 9. Value of building consents by sector.

Value of new non-residential consents (\$millions)															
Yearly data 2006-2020															
	2006	2007	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Institutional	781	756	926	1,141	1,051	836	1,105	1,115	1,628	1,903	1,706	2,061	2,190	1,978	2,678
Commercial	1,089	1,191	1,115	695	722	933	808	1,461	1,496	1,513	1,742	1,601	1,705	1,510	1,404
Industrial	952	1,026	1,256	724	730	876	993	1,149	1,280	1,162	1,427	1,767	1,676	1,947	2,423
Total non-residential buildings	2,821	2,973	3,298	2,559	2,503	2,645	2,907	3,724	4,404	4,578	4,875	5,429	5,572	5,436	6,505

Source: Stats NZ

A.2 Survey form March 2007

NON-RESIDENTIAL BUILDINGS																																													
Please give this form to the builder or designer to fill out for the building consent listed over the page. Contract value of work (incl sub-trades) \$ incl GST.																																													
Type of Building (state type) e.g. Office, school, farm building etc																																													
<input type="checkbox"/> tick New <input type="checkbox"/> Addition <input type="checkbox"/> Alteration		Floor area sqm sqm (describe alterations)		Number of storeys Average storey heightm																																									
Main Structure <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> tick one or more Concrete frame <input type="checkbox"/> Steel frame </div> <div> <input type="checkbox"/> tick Timber frame <input type="checkbox"/> Tilt slab </div> <div> <input type="checkbox"/> tick Conc block Other.....(state) </div> <div> <input type="checkbox"/> tick Laminated wood </div> </div>																																													
Floor base material Concretesqm Particle Boardsqm Plywoodsqm Other (state) sqm																																													
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Roof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																						
	Flamestop®	Tyvek®	Thermakraft coverup	FrameGard II	Greenwrap	Fastwrap	Black Paper	Other (state)																																					
Wall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																					
Wall cladding (only applicable if there is new wall cladding) <p style="margin-top: 5px;">State type</p> <table style="width: 100%;"> <tr> <td>Type</td> <td>% area.....</td> <td>e.g.</td> <td>tilt slab, 60%</td> <td rowspan="5" style="vertical-align: top;">also plywood, solid plaster(min 18mm), plaster on polystyrene, sheet steel, PVC weatherboard, etc.</td> </tr> <tr> <td>Type</td> <td>% area.....</td> <td>concrete block, 15%</td> </tr> <tr> <td>Type</td> <td>% area.....</td> <td>glazing, 10%</td> </tr> <tr> <td>Type</td> <td>% area.....</td> <td>fibre cement, 15%</td> </tr> <tr> <td colspan="3">Total</td> <td>100%</td> </tr> </table> <p style="margin-top: 10px;">If yes to Fibre Cement cladding what is the Manufacturer? (tick one or more)</p> <div style="display: flex; justify-content: space-around;"> <div><input type="checkbox"/> Hardies</div> <div><input type="checkbox"/> BGC</div> <div><input type="checkbox"/> CSR</div> <div><input type="checkbox"/> PRIMA</div> <div><input type="checkbox"/> Other</div> </div> <p style="margin-top: 5px;">Fibre Cement Product was used as (Circle one or more)</p> <div style="display: flex; justify-content: space-around;"> <div>Applied texture finish sheet,</div> <div>Flat sheet,</div> <div>FC plank,</div> <div>FC weatherboard/Linea</div> </div> <p style="margin-top: 5px;">If solid plaster, what backing? (circle one if solid plaster)</p> <div style="display: flex; justify-content: space-around;"> <div>fibre cement, plywood,</div> <div>paper,</div> <div>Triple S,</div> <div>block/brick,</div> <div>metal lathe</div> </div>										Type	% area.....	e.g.	tilt slab, 60%	also plywood, solid plaster(min 18mm), plaster on polystyrene, sheet steel, PVC weatherboard, etc.	Type	% area.....	concrete block, 15%	Type	% area.....	glazing, 10%	Type	% area.....	fibre cement, 15%	Total			100%																		
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Total			100%																																										
Wet area linings (bathroom, kitchen, laundry etc) <p style="margin-top: 5px;">Please tick one or more and the approximate square meters used.</p> <table style="width: 100%;"> <tr> <td>Formica Aquapanel</td> <td>Seratone</td> <td>Villaboard</td> <td>Hardiglaze</td> <td>GIB</td> <td>Aqualine</td> <td>Other (state)</td> </tr> <tr> <td><input type="text"/> m2</td> <td><input type="text"/> m2</td> <td><input type="text"/> m2</td> <td><input type="text"/> m2</td> <td><input type="text"/> m2</td> <td><input type="text"/> m2</td> <td><input type="text"/> m2</td> </tr> </table>										Formica Aquapanel	Seratone	Villaboard	Hardiglaze	GIB	Aqualine	Other (state)	<input type="text"/> m2	<input type="text"/> m2	<input type="text"/> m2	<input type="text"/> m2	<input type="text"/> m2	<input type="text"/> m2	<input type="text"/> m2																						
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Roof cladding (only applicable if there is new roof cladding) <p style="margin-top: 5px;">Type Roof areasq metres.</p> <p style="margin-top: 5px;">eg pre-coated steel shallow profile, trough steel profile, aluminum sheet, metal tiles, butyl rubber sheet, bitumen asphalt sheet, etc</p>																																													
Thank You. Please fold this form, and freepost it in the return envelope Mar-07																																													

A.3 Survey form November 2011

NON-RESIDENTIAL											
Please give this form to the builder or designer to fill out for the building consent listed over the page.											
Contract value of work (incl sub-trades) \$ incl GST											
Type of Building (state type) e.g. Office, school, farm building etc <div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> tick floor area New <input type="checkbox"/> sqm Addition <input type="checkbox"/> sqm Alteration <input type="checkbox"/> (describe alteration) </div> <div style="width: 50%;"> Number of storeys: Average storey height: m </div> </div>											
Are you claiming "green" building features? Yes / No If Yes, what type?											
Main Structure Concrete Frame <input type="checkbox"/> Timber Frame <input type="checkbox"/> Concrete block <input type="checkbox"/> LVL <input type="checkbox"/> Glulam <input type="checkbox"/> Steel Frame <input type="checkbox"/> Tilt Slab <input type="checkbox"/> Other (state)											
Floor Base Material Concrete sqm Particle Board sqm Plywood sqm Other (state) sqm If concrete, have any steel deck trays been used? Yes / No (circle one)											
Partition Wall Framing (tick one or more) Timber <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other (state)											
Wall Infill Framing (between main frame) (tick one or more) Radiata <input type="checkbox"/> Steel <input type="checkbox"/> Douglas Fir <input type="checkbox"/> Concrete block <input type="checkbox"/> Other (state)											
Prefabrication Are any prefabricated components used? Yes / No If yes, describe applicable component(s) below: <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> Prefab Frame Prefab Walls </div> <div style="width: 45%;"> Prefab Floors Prefab Other </div> </div>											
Insulation (tick one or more) <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> Wall insulation <input type="checkbox"/> None <input type="checkbox"/> Pink Batts <input type="checkbox"/> Bradford Gold <input type="checkbox"/> Premier Fibreglass <input type="checkbox"/> Brown 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) Ceiling insulation <input type="checkbox"/> Expol <input type="checkbox"/> Polystyrene (not Polythene) <input type="checkbox"/> Snug <input type="checkbox"/> Sisalation <input type="checkbox"/> Ribraft <input type="checkbox"/> Other (state) Floor insulation <input type="checkbox"/> None <input type="checkbox"/> Warmfeet <input type="checkbox"/> Under Slab <input type="checkbox"/> Floor <input type="checkbox"/> Foil <input type="checkbox"/> Floor <input type="checkbox"/> Cupolex <input type="checkbox"/> Other (state) </div> <div style="width: 35%;"> Insulation Installer (name) Builder <input type="checkbox"/> Other (please specify) <input type="checkbox"/> </div> </div>											
Building Wraps (tick one or more) <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> Roof wrap <input type="checkbox"/> Flamestop <input type="checkbox"/> Thermacraft <input type="checkbox"/> Bitumac <input type="checkbox"/> CoverTek <input type="checkbox"/> Pauloid <input type="checkbox"/> Paper <input type="checkbox"/> Other (state) <input type="checkbox"/> Diflex 130 <input type="checkbox"/> Tekton <input type="checkbox"/> Wall wrap <input type="checkbox"/> Flamestop <input type="checkbox"/> Tyvek <input type="checkbox"/> Thermacraft <input type="checkbox"/> Frameguard <input type="checkbox"/> Home RAB <input type="checkbox"/> Fastwrap <input type="checkbox"/> Paper <input type="checkbox"/> Other (state) <input type="checkbox"/> Diflex 130 <input type="checkbox"/> Tekton <input type="checkbox"/> Ecoply Barrier <input type="checkbox"/> </div> <div style="width: 35%;"> Black <input type="checkbox"/> Other <input type="checkbox"/> Black <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>											
Wall Cladding State type and approximate % wall coverage e.g. Fibre cement, 75% Other examples include: tilt slab, concrete block, steel zincalume, glazing, aluminium, Clay Brick, 15% radiata WB, linea WB etc. Cedar WB, 10% Type % area Type % area Type % area If Fibre Cement cladding is used, who is the manufacturer? 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 Applied texture finish sheet, Flat sheet, FC plank (7.5mm), Linea (16mm) If solid plaster, what backing was used? Fibre cement, plywood, paper, Triple S, block/brick, metal lathe											
Wet Area Linings (bathroom, kitchen, laundry etc) Please state the approximate square metres used Formica Aquapanel <input type="text"/> m ² Seratone <input type="text"/> m ² Villaboard <input type="text"/> m ² Hardiglaze <input type="text"/> m ² GIB <input type="text"/> m ² Aqualine <input type="text"/> m ² Other <input type="text"/> m ² (state)											
Roof Cladding (only applicable if there is new roof cladding) What roof cladding was used? (circle one or state below) metal tiles, prepainted corrugated, trough zincalume, other steel profiles, concrete tiles, butyl, asphalt shingles, other (state) Approx. Roof Area: sqm Type of roof structure Timber <input type="checkbox"/> Steel <input type="checkbox"/> Concrete Slab <input type="checkbox"/>											
Thank you. Please fold this form, and freepost it in the return envelope											

Nov-11

A.4 Survey form October 2015

NON-RESIDENTIAL									
Please give this form to the builder or designer to fill out for the building consent listed over the page.									
Contract value of work (incl sub-trades) \$ Incl GST									
Type of Building (state type) e.g. Office, school, farm building etc									
<div style="display: flex; justify-content: space-between;"> <div> tick floor area New <input type="checkbox"/> sqm Addition <input type="checkbox"/> sqm Alteration <input type="checkbox"/> (describe alterations) </div> <div> Number of storeys: Average storey height: m </div> </div>									
Are you claiming "green" building features? Yes / No If Yes, what type?									
Main Structure									
Concrete Frame <input type="checkbox"/> Timber Frame <input type="checkbox"/> Concrete Block <input type="checkbox"/> LVL <input type="checkbox"/> Glulam <input type="checkbox"/> Steel Frame <input type="checkbox"/> Tilt Slab <input type="checkbox"/> Insulated Panel <input type="checkbox"/> Other (state)									
Floor Base Material									
Concrete sqm Particle Board sqm Plywood sqm Other (state) sqm If concrete, have any steel deck trays been used? Yes / No (circle one)									
Partition Wall Framing (tick one or more)									
Timber <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other (state)									
Wall Infill Framing (between main frame) (tick one or more)									
Radiata <input type="checkbox"/> Steel <input type="checkbox"/> Douglas Fir <input type="checkbox"/> Concrete block <input type="checkbox"/> Other (state)									
Prefabrication									
Are any prefabricated components used? Yes / No If yes, describe applicable component(s) below:									
Prefab Frame Prefab Floors Prefab Walls Prefab Other									
Insulation (tick one or more)									
Wall insulation <input type="checkbox"/> None <input type="checkbox"/> Pink Batts <input type="checkbox"/> Bradford Gold <input type="checkbox"/> Premier <input type="checkbox"/> Knauf Earthwool <input type="checkbox"/> Autex Greenstuf <input type="checkbox"/> Other Polyester <input type="checkbox"/> Wool <input type="checkbox"/> Polystyrene <input type="checkbox"/> Other (state) Ceiling insulation <input type="checkbox"/> Concrete slab insulation <input type="checkbox"/> Underslab full/partial <input type="checkbox"/> Perimeter edge <input type="checkbox"/> Under footing <input type="checkbox"/> Timber sub-floor insulation <input type="checkbox"/> Polystyrene <input type="checkbox"/> Polyester <input type="checkbox"/> Glasswool <input type="checkbox"/> Foil <input type="checkbox"/> Floor insulation <input type="checkbox"/> Insulation Installer (name) Builder <input type="checkbox"/> Other (please specify)									
Building Wraps									
Roof Wrap <input type="checkbox"/> Flamstop <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) Wall Wrap <input type="checkbox"/> 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)									
Wall Cladding State type and approximate % wall coverage									
e.g. Concrete block, 75% Other examples include: tilt slab, concrete block, steel zincalume, glazing, aluminium, Clay Brick, 15% radiata WB, linea WB etc. Cedar WB, 10% Type % area Type % area Type % area If Fibre Cement product, what is it used as? (circle one) Applied texture finish sheet, Flat sheet, FC plank (7.5mm), Linea (16mm)									
Wet Area Linings (bathroom, kitchen, laundry etc)									
Please state the approximate square metres used									
Formica Aquapanel <input type="checkbox"/> m ² Seratone <input type="checkbox"/> m ² Villaboard <input type="checkbox"/> m ² Hardiglaze <input type="checkbox"/> m ² GIB <input type="checkbox"/> m ² Aqualine <input type="checkbox"/> m ² Other (state)									
Spouting									
What profile is the SPOUTING?									
1/2 round/quad <input type="checkbox"/> 1/2 round <input type="checkbox"/> Old gothic <input type="checkbox"/> Box <input type="checkbox"/> Other (state) 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) Who installed the SPOUTING? Roofer <input type="checkbox"/> Spouting installer <input type="checkbox"/> Builder <input type="checkbox"/> Plumber <input type="checkbox"/> Other (state)									
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) 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) Who installed the DOWNPIPES? Roofer <input type="checkbox"/> Spouting installer <input type="checkbox"/> Builder <input type="checkbox"/> Plumber <input type="checkbox"/> Other (state)									
Roof Cladding (only applicable if there is new roof cladding)									
What roof cladding was used? (circle one or state below)									
metal tiles, pre-painted corrugated, trough zincalume, other steel profiles, concrete tiles, butyl, asphalt shingles, other (state) Approx. Roof Area: sqm Type of roof structure Timber <input type="checkbox"/> Steel <input type="checkbox"/> Concrete Slab <input type="checkbox"/>									
Thank you. Please fold this form, and freepost it in the return envelope									
Oct-15									