



Energy Efficiency and  
Conservation Authority  
Te Tari Tiaki Pūngao



# Warmer Kiwi Homes

## Quality and Audit Manual

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# Definitions

The terms below have specific meanings under Warmer Kiwi Homes. Where possible the terms are the same as terms in the Funding Agreement but some may have a wider and/or extended meaning here to clarify their use and context in the Quality and Audit Manual (the Manual). Defined terms are typically not capitalised in whole or part in the Manual.

- **Assessment** means the initial inspection of a House carried out by a service provider to determine the suitability of the House for an installation, and to determine which measures should be installed. It involves a full inspection of the house in particular, with the requirements of the assessment form and assessment form guidelines (see section 6.2 of this Manual).
- **Audit** means a review and/or inspection of an installation and/or the information submitted by the service provider including records submitted, reports submitted, claims made and installations claimed against. It excludes a post-installation audit.
- **Audit Inspection Form (AIF)** means the paper-based form completed by the auditor when auditing an installation.
- **Auditor** means a person appointed by EECA to conduct audits under the programme.
- **Audit report** means the report of an audit produced in GEM.
- **Claim** means an electronic report uploaded in GEM by the service provider for payment under the terms of the Funding Agreement.
- **Climate zones** mean the climate zones as defined in NZS 4246 Appendix D.
- **Corrective Action** means the work carried out after an audit to bring a measure up to the programme requirements, the investigation as to why corrective action was needed, the actions taken to prevent any recurrence, and the consequent reporting required through GEM. Correct and corrected have corresponding meanings.
- **Electrical fitting** has the same meaning as fitting in the Electricity Act 1992.
- **Existing Insulation** means insulation installed in the ceiling and/or underfloor of a house at the time of the assessment, and includes foil in the underfloor.
- **Funding** means funding through the Warmer Kiwi Homes programme. Funded and fund have corresponding meanings.
- **Funding Agreement** means the contract between EECA and a service provider under Warmer Kiwi Homes and includes all its schedules.
- **GEM** means EECA's online database used for administering aspects of the programme including the submission of reports and claims.
- **Homeowner** means a person with legal title to a house
- **House** means a residential dwelling built prior to 1 January 2008 and includes any part of that dwelling whether or not it has been renovated or altered since that date. A House also includes a dwelling that is part of a retirement village and occupied under a licence to occupy, but excludes:
  - a residential dwelling of a type that is excluded from the Residential Tenancies Act 1986 under section 5(1)(a) – (k), (m), (q), (r), (t) – (tb), and (x) of that Act;
  - a residential dwelling owned by a territorial local authority, Housing New Zealand Corporation, or any other Crown entity, state department or ministry, or state owned enterprise; and
  - a building that was not used as a residential dwelling before 1 January 2008.

- **Installation** means the retrofitting of products in accordance with this annual and the provisions of the Funding Agreement.
- **Installation Matter** means a serious installation matter and/or other installation matter.
- **Mandatory Measures** means the measures that must be installed in a house for the installation to qualify for government funding.
- **Measure** means a product that the programme funds, and includes mandatory measure and optional measure.
- **NZEC 55** means New Zealand Electrical Code Of Practice For Managing Electrical Risks Associated With Electrically Conductive Thermal Insulation NZEC 55:2016.
- **NZS 4246** means the New Zealand Standard NZS 4246:2016 Energy Efficiency – Installing Bulk Thermal Insulation in Residential Buildings (published, and effective from August 2016). (“NZS 4246”) see section 7: References.
- **Occupant** means a person identified by the service provider as having the legal right to occupy a House.
- **Optional Measures** means the funded measures that are recommended in addition to the mandatory measures.
- **Other Installation Matter** means any aspect of the installation of a measure that does not meet the requirements of the programme, but excludes serious installation matters.
- **Payment** means the payment to a service provider based on a claim made to EECA in accordance with the provisions of the Funding Agreement.
- **Product** means the items or services that have met EECA standards for installation under Warmer Kiwi Homes and are listed in Schedule 3 of the Funding Agreement.
- **Post-Installation Audit (PIA)** means the check carried out by the service provider after the installation of measures.
- **Remedial Work** has the meaning set out in Table 1. Remedy and remedied have corresponding meanings.
- **Roofing** means both the roof cladding and underlay, but not the timber framing (rafters and purlins), or the roof sarking (usually timber boards fixed to rafters).
- **Serious Installation Matter** means an (unsafe) aspect of an installation that is designated “critical” in the audit report and includes matters that may be designated “critical” in the audit inspection form guidelines.
- **Service Provider** means a person or organisation that has entered into a Funding Agreement with EECA.
- **Top-up solution** has the meaning set out in Table 2.
- **Total Fill Solution** has the meaning set out in Table 2.

# 1 Introduction

The Quality and Audit Manual (the Manual) provides important information for service providers and auditors under EECA's Warmer Kiwi Homes programme. It outlines EECA's specifications for the installation of insulation and requirements for the management of quality systems. It also provides general guidance to support the delivery of high quality, effective retrofits under the programme.

The Manual includes the following guidelines:

- *Guidelines for Service Providers and Guidelines for Auditors; and,*
- *Warmer Kiwi Homes Brand Guidelines; and,*
- *GEM User Guidelines for Service Provider (Contracts, Residential Audits, Milestone and Claims); and,*
- *GEM User Guidelines for Auditors (Residential Audits - Branch Office, Residential Audits - National Office)*

This version 1.0 of the Manual applies to all Warmer Kiwi Homes installations undertaken from 01/07/2018.

It is a requirement of the Funding Agreement that service providers comply in all respects with the Manual. Auditors engaged by EECA to measure compliance with aspects of the programme and its delivery use the Manual as a reference document.

The requirements set out in the Manual take precedence over NZS 4246 and/or manufacturers' specifications, therefore it's important for service providers to familiarise themselves with the whole Manual. If you are in any doubt about the application of anything in the Manual you are strongly advised to seek guidance from EECA before carrying out any work.

It is a requirement of the Funding Agreement that service providers comply with all New Zealand laws, regulations and standards applicable to all aspects of work carried out under Warmer Kiwi Homes.

It is the service provider's responsibility to ensure they know their obligations and fulfil them.

## 2 Background

### 2.1 Warmer Kiwi Homes

Warmer Kiwi Homes is a new government insulation programme that will help fund the installation of insulation and heating into around 52,000 houses in the target group over four years (July 2018 – June 2022). The government has made \$142.5 million available for the programme.

Under the Warmer Kiwi Homes programme, the Government is focusing on low-income homeowner-occupied households. Government funding is for ceiling and underfloor insulation, ceiling space walls, subfloor space walls, pipe lagging in ceilings, and on-ground moisture barriers to homes of properties where the homeowner is a permanent occupant of the home, which has been a residential property before January 2008, and either:

- holds a Community Service Card or SuperGold combo card; or
- the home occupied is in an area with a value of 9 or 10 on the ordinal scale of NZ Dep 2013 (and future reviews); or
- any permanent occupant of the home has been referred by the Health Homes Initiative.

### 2.2 Additional programme documents

Service providers should be aware of the following important programme documents.

#### 2.2.1 EECA insulation product approval policy

This policy sets out the criteria and process used by EECA to assess whether insulation products - ceiling, underfloor insulation and wall insulation - are acceptable for use under Warmer Kiwi Homes. It includes an application form for having a product accepted under the programme.

This document can be found on EECA's Energywise website:

<https://www.energywise.govt.nz/funding-and-support/payment-options-for-insulation-and-heating/list-of-accepted-insulation-products/>. For a link to a list of products currently approved for the programme [see section 7](#).

## 2.3 EECA's secure partners website

A number of important programme documents are stored on EECA's secure partners website (EECA's secure website) (<https://www.eeca.govt.nz/user>) for service providers, including:

- Guidelines for Service Providers,
- Guidelines for Auditors,
- GEM Manual, and
- Forms and templates.

The secure website is also EECA's portal for the bulk uploading of GEM claims

## 2.4 Process overview

Effective delivery of insulation into houses under Warmer Kiwi Homes involves some processes that must be followed to ensure that programme requirements are met.

Figure 1 outlines key process steps involved in the quality assurance audit process and Figure 2 provides an overview of process steps the service provider must complete in relation to each house. Further detail about these and other processes is provided throughout the Manual.

### Key process steps for service providers:

1. An eligible homeowner contacts the service provider to request an assessment.
2. The service provider confirms eligibility by completing the declaration form and then completes an insulation assessment and an assessment form.
3. Service provider completes an approval for work and this is accepted by the homeowner.
4. Service provider undertakes installation of measures.
5. Service provider completes a post installation audit post installation audit form.
6. Homeowner receives an invoice or completion certificate from the service provider.
7. Service provider makes a claim (in GEM).
8. EECA makes payment to service provider.
9. Possible EECA audit and corrective actions required.

### Key process steps in the audit process

1. EECA issues auditor(s) a list of houses to audit.
2. Auditor contacts homeowner to make an appointment.
3. Appointment is confirmed by the homeowner and GEM notifies the service provider automatically.
4. Auditor conducts audit and completes audit inspection form. If present, the service provider can discuss the determinations and sign the audit form. Auditor notifies the service provider of serious installation matters as soon as practicable. Auditor completes the audit report. A service provider is automatically notified when audit report is completed.
5. Service provider completes any required corrective actions.
6. EECA may investigate any non-compliance matter

### 3 Important safety considerations

Under Warmer Kiwi Homes, service providers and auditors must comply with the following:

#### **Service providers and Auditors must:**

- Inform the homeowner as soon as practicable when they become aware of any safety matter or potential risk, regardless of whether it is related to an existing or current installation or not.
- Make note of any safety issues at a property (e.g. dogs, broken glass, loose wiring), and if practicable make these issues known to installers, auditors and anyone else the service provider is aware of who may visit the site in relation to the programme.
- Refer to NZS 4246 Appendix B Health and Safety for guidance, noting that safety issues may arise.
- Refer to NZECP 55 when inspecting, removing or working in the presence of foil insulation.

#### **Service providers must also:**

- Notify the homeowner of any serious installation matter discovered during an assessment.
- Fix any serious installation matter found during an installation or post-installation audit.
- Complete corrective action for a serious installation matter within 48 hours of being notified by EECA or an auditor.
- Inform the homeowner of the potential risks of doing any work themselves related to any measure, or any remedial work.
- Comply with regulation 17(4) of the Electrical Safety Regulations, which states that “A person commits an offence if the person places thermal insulating material on or around fittings in an installation in such a way that the safety of the installation is compromised”. Ensure that the service provider’s personnel are aware that failure to comply with the relevant standards could result in serious sanctions.

#### **Auditors must:**

- Inform the service provider as soon as practicable of any serious installation matter found during an audit.
- Where practicable, make safe or make good a serious installation matter found during an audit.

## 4 Funding

### 4.1 Houses for which a claim may be made

A service provider may make a claim for an installation in a house or any part of a house, including:

- a sleep out or garage which has been permanently converted into a living/bedroom space (i.e. it is no longer used for vehicles, as a workshop or for storage);
- the ceiling of garages with living areas above;

But NOT:

- houses where mandatory measures cannot be installed to their full extent because of the presence of stored materials;
- ceiling spaces above attached garages, except where a garage is, or is under, a living space;
- walls – other than internal ceiling space walls and subfloor space walls.

### 4.2 What the programme funds

The programme funds mandatory and optional measures.

#### 4.2.1 Measures

**Mandatory measures** are:

- Ceiling insulation.
- Ceiling space wall insulation – where insulation to the internal ceiling space wall completes the thermal envelope (i.e. where the internal ceiling space wall has a living space on the other side).
- Pipe lagging (ceiling space in climate zone 3 and for houses that regularly experience freezing in climate zones 1 & 2).
- Underfloor insulation.
- Subfloor space wall insulation – where insulation to the internal subfloor space wall completes the thermal envelope (i.e. where the internal subfloor space wall has a living space on the other side).
- Remedial work set out in Table 1 (if required).

**Table 1: Remedial work**

<b>To bring existing installation into compliance with the requirements of the programme remedial work covers the ceiling and underfloor services outlined below:</b>	
Ceiling:	The repair of any existing ceiling insulation that is consistently more than 120mm deep as required to meet programme requirements.
Underfloor:	The repair of any existing insulation (excluding Foil) to meet programme requirements.
Ceiling space walls and subfloor space walls:	The repair of any existing insulation in ceiling space walls and subfloor space walls to meet programme requirements.
On-ground moisture barrier:	The repair of any existing on-ground moisture barrier to meet NZS 4246.
Reminder: Remedial work is funded at the agreed hourly rate as set out in the Funding Agreement. A service provider must provide details of the remedial work undertaken on the Post Installation Audit form.	

**Optional measures** are:

- On-ground moisture barrier.

**Installation of measures:**

Installation must be in accordance with Section 5: Installation Specifications. If a service provider decides, for any reason other than health and safety considerations or insufficient access, not to install a mandatory measure then funding is not available to install any measure.

## **4.2.2 Where mandatory measures are not required**

### **4.2.2.1 Insufficient access**

Installation of a mandatory measure is not required if the service provider has reasonable grounds to believe there is insufficient access, and the details of this judgement are recorded on the assessment and post installation audit (PIA) forms.

### **4.2.2.2 Foil roof underlays**

Similarly, in houses with existing foil installed as a roof underlay in the ceiling space NZS 4246 section 6.2.7 does not allow the installation of ceiling insulation.

### **4.2.2.3 What this means in practice**

If one area where mandatory measures are required has insufficient access or is not allowed by NZS 4246, funding is still available for other areas where mandatory measures are required.

For example, if the ceiling space has insufficient access or has a foil roof underlay the homeowner may still receive funding for underfloor insulation.

**Examples of reasonable grounds for insufficient access:**

- a house with a skillion or flat roof or concrete slab floor;
- insufficient workspace in the ceiling or subfloor space (e.g. because of a low roof pitch) as determined by the service provider's health and safety policy, and noted in the comments section of the assessment and PIA audit form;
- no entry point to the ceiling or subfloor space;
- no access to pipes for the installation of lagging.

**Examples of un-reasonable grounds for insufficient access:**

- Lack of access due to stored material or waste in an area where mandatory measures should be installed is not grounds for determining insufficient access.
- Reminder: To be eligible for any funding, the homeowner must ensure the removal of all stored material or waste that could block access to any area where mandatory measures should be installed. In other words, if a service provider cannot access one area due to stored material or waste, the homeowner is not eligible to receive any grant.

## 4.3 Where funding is not available

The following types of work are not funded under the programme and must be carried out at the service provider's expense (i.e. no claim may be made to EECA for corrective actions, other products or other services as set out below):

### Corrective Action:

- Work a service provider is required to do during or after a post-installation audit, to bring an installation into compliance with the programme requirements.
- Corrective action carried out after an audit.

### Other Services

Service providers may offer services to the homeowner that are outside the programme (e.g. fixing a broken window), but no claim may be made to EECA for this work. Some examples of other services are:

- installing pipe lagging to water pipes in the ceiling space in houses located in areas not prone to freezing in climate zones 1 & 2
- removing foil in the ceiling space to enable installation of ceiling insulation in accordance with NZS 4246 clause 6.2.7;
- scaffolding required to install insulation under the programme;
- additional costs (above the specified product cost) - for a higher specification product;
- removing existing debris, rubble or stored materials;
- any repair work required to enable the installation of mandatory or optional measures, such as fixing roof or plumbing leaks or remedial work to stop storm or surface water entering the subfloor space;
- any work associated with providing access, for example to a ceiling or subfloor space, such as:
  - removing or adding claddings or linings;
  - building an access hatch;
  - digging trenches to access the subfloor.

## 4.4 Where products of different specifications are permitted

In some circumstances a product with a higher or lower specification (i.e. R-value) may be used. Where this occurs, the reasons for departing from the usual specifications must be recorded on the assessment and post insulation audit forms and included in the comments field in the GEM claims report.

### 4.4.1 Higher - specification product

The homeowner may request and have installed a higher specification product, but the homeowner is liable for any additional costs.

In the event the insulation is being installed through a combination of government funding and third party funding to cover 100% of the cost to install the minimum acceptable R value product for the solution required as per Table 2 in 5.1.2 for ceilings and Table 3 in 5.2.2 for underfloors, the homeowner is NOT liable for any additional costs associated with an upgrade to a higher specified product.

## 4.4.2 Lower - specification product

Service providers may install a lower-specification product where a particular construction element (e.g. roof type) prevents the installation of the specified product. For details on keeping photographic records see section 5.1.3.

### Examples where lower ceiling product R-value may be required:

- a low pitch roof where the required R-value ceiling insulation product cannot be installed out to the top plate because of limited space;
- to fill gaps in existing insulation (i.e. prior to installation of a top-up or total-fill solution);
- to block off ends of joist runs where blanket insulation is perpendicular to ceiling joists.

## 4.5 Claiming funds

### 4.5.1 Prerequisites for making a claim

Before a service provider can make a claim the following must have occurred:

- The service provider must have completed an assessment of the house prior to installation and a post installation audit after installation;
- Declaration forms must have been completed with and signed by the homeowner;
- The service provider must have signed an approval for work with the homeowner prior to installation and provided a completion certificate or invoice once the installation was complete;
- Any installation matters identified during the post installation audit must have been addressed.
- The installation must have been completed:
  - by or on behalf of a service provider, and
  - in accordance with the service provider's Funding Agreement.

### 4.5.2 Conditions of payment

To receive payment a service provider must make a claim to EECA via GEM in the format required.

Declaration forms and a post installation audit form must be submitted **together** for each house, at the same time a claim is made.

The measures, products and square metres claimed must be consistent with those:

- actually installed;
- listed on an approval for work form and completion certificate; and
- on the post installation audit form.

Service providers must claim all mandatory measures for a house at the same time.

## 5 Installation specifications

This section describes the specifications and requirements for installing measures as described in section 4.

### 5.1 Ceiling insulation

Ceiling insulation product must be installed in every house except where it is unsafe to do so or where there is insufficient access. Figure 3 and Table 2 below set out the criteria to apply a Total Fill solution or Top-up solution and when no insulation is required.

#### 5.1.1 Overview of ceiling insulation requirements<sup>1</sup>

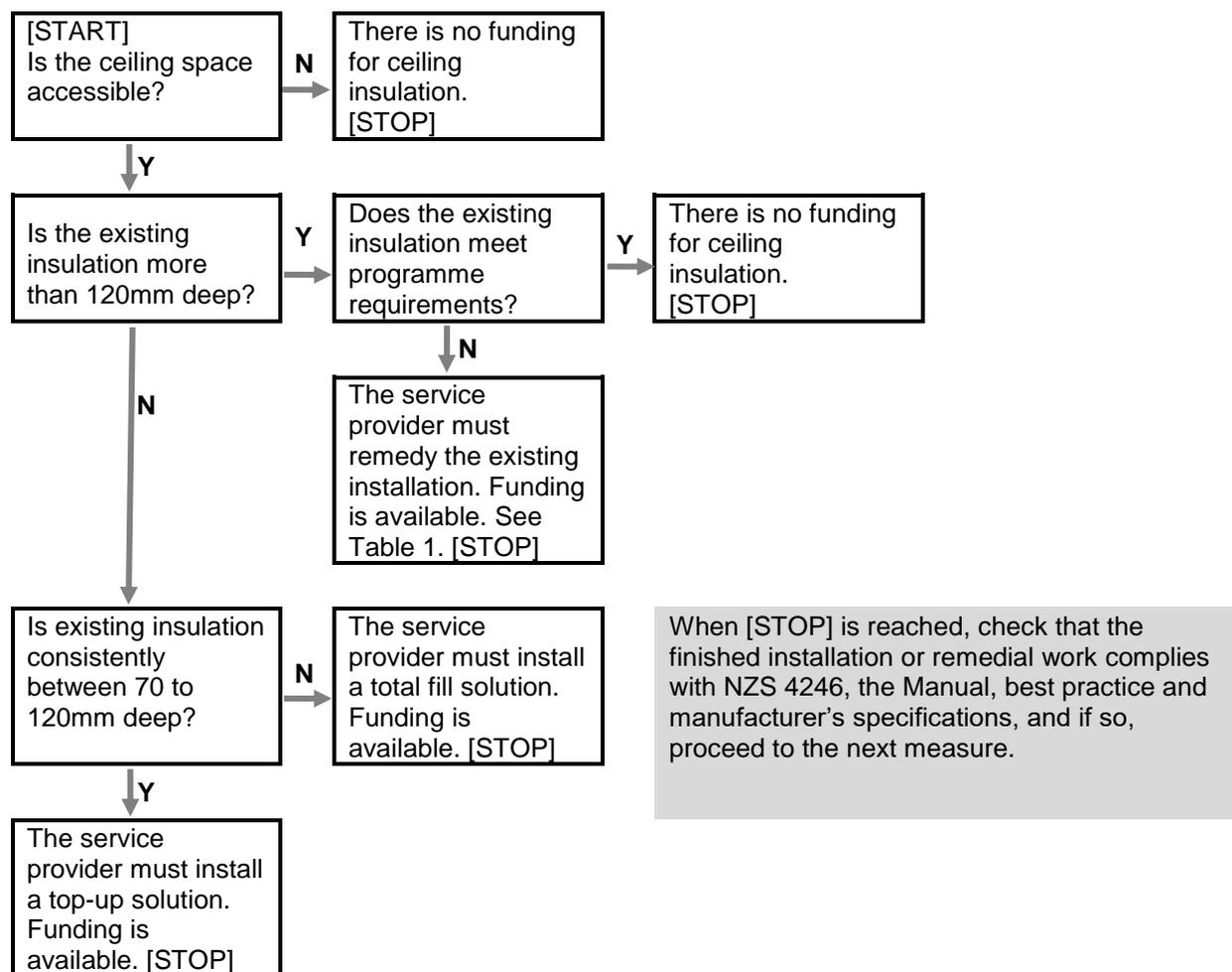


Figure 1: Overview of ceiling insulation requirements

<sup>1</sup> Insulation depth measurements should be taken from the bottom of the joist or truss to the top of the insulation.

## 5.1.2 Ceiling insulation product requirements

Products used for ceiling insulation must be listed on EECA's List of Accepted Insulation Products and on the service provider's Funding Agreement. Products used for ceiling insulation must meet or may exceed the product R-value for the relevant situation, installation method and climate zone as set out in Table 2.

**Table 2: Required product R-value table for ceiling insulation.**

Required Solution	Acceptable installation methods	Required insulation product R-value	
		Climate zones 1 and 2	Climate zone 3
<b>No existing insulation:</b>			
Total fill solution	Segments or blankets fitted between ceiling joists/trusses	R3.4	R4.0
	Blankets laid over ceiling joists/trusses	R2.9	R3.3
<b>Existing insulation is less than 70mm deep<sup>2</sup>:</b>			
Total fill solution	Segments or blankets fitted between ceiling joists/trusses	R3.4	R4.0
	Blankets laid over ceiling joists/trusses	R2.9	R3.3
<b>Existing insulation is consistently greater than 70mm (but not more than 120mm) deep<sup>2</sup> and does <u>not</u> consistently have at least the same height as the top of ceiling joists or truss chords:</b>			
Top up solution	Blankets laid over ceiling joists/trusses	R1.8	R2.4
<b>Existing insulation is consistently greater than 70mm (but not more than 120mm) deep<sup>2</sup> and consistently has at least the same height as the top of ceiling joists or truss chords:</b>			
Top up solution	Segments or blankets laid over ceiling joists/trusses	R1.8	R2.4
<b>Existing insulation is consistently more than 120mm deep<sup>2</sup>:</b>			
No insulation is required	The service provider must carry out whatever remedial work is necessary to ensure that the existing insulation meets the requirements of NZS 4246, this Manual and the manufacturer's specifications. The existing installation is then sufficient for all climate zones and there is no funding for any further ceiling insulation.		

<sup>2</sup> Insulation depth measurements should be taken from the bottom of the joist or truss to the top of the insulation.

### **5.1.3 Installation**

Ceiling insulation must be installed in accordance with this Manual, NZS 4246, manufacturers' instructions and best practice.

#### **Warning sign**

Where clearances are required between the insulation and any recessed luminaires, the service provider should install a warning sign in accordance with NZS 4246 Appendix C.

#### **Photos of inaccessible space after installation**

Service providers are required to keep a detailed photographic record of work completed - particularly in areas where safety may be a concern; for example, around recessed lights and flues.

#### **Ceiling spaces with foil roof underlay**

Where foil is installed as a roof underlay, ceiling insulation shall not be installed in accordance with NZS 4246 clause 6.2.7. Funding is still available for other areas where mandatory measures are required.

Where foil in the ceiling space is not installed as a roof underlay, ceiling insulation may be installed in accordance with NZS 4246 clause 6.2.7.

## 5.2 Underfloor insulation

Underfloor insulation product must be installed in every house except where it is unsafe to do so or where there is insufficient access. Figure 4 and Table 3 below set out the criteria for when underfloor insulation is required.

### 5.2.1 Overview of underfloor insulation requirements

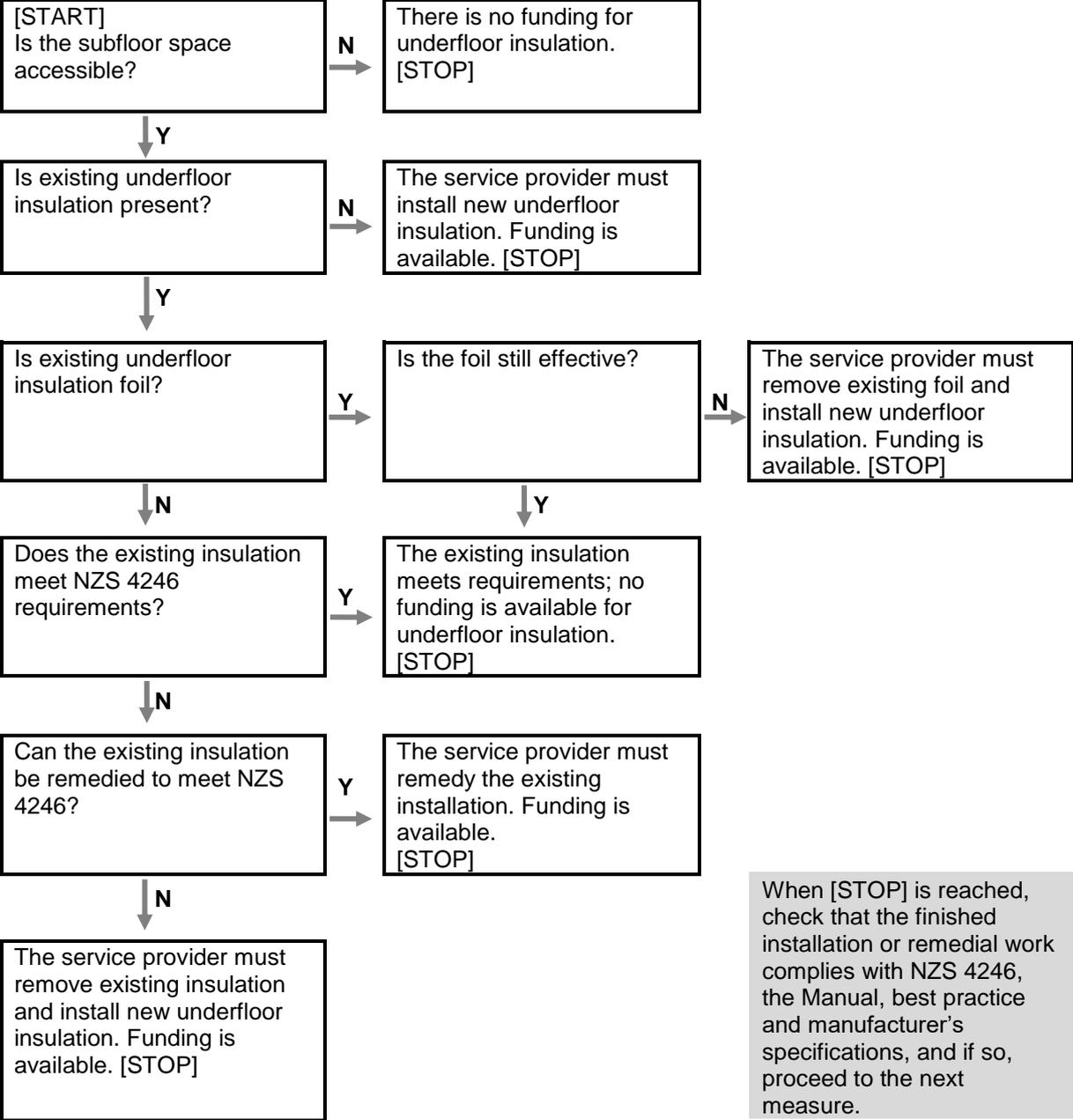


Figure 2: Overview of underfloor insulation requirements

## 5.2.2 Underfloor insulation product requirements

Products used for ceiling insulation must be listed on EECA's List of Accepted Insulation Products and on the service provider's Funding Agreement.

### Product R-value

Products used for underfloor insulation must meet or may exceed the product R-value for the relevant climate zone set out in Table 3.

**Table 3: Required product R-value for underfloor insulation**

Climate zone	Required Insulation Product R-value
1, 2 & 3	1.4

### Insulation to be installed in subfloors without enclosed perimeter foundation

Insulation products to be installed and left exposed in subfloors without enclosed perimeter foundation must be designed for installation in open-perimeter floor spaces. Refer to manufacturer's instructions and NZS 4246 clause 7.2.5.

### Insulation to be installed in a service space

Insulation products to be installed and left exposed in the 'underfloor' above an area which is used as a service space, such as a garage, external laundry or workshop, must meet the provisions of the NZ Building Code Acceptable Solution for Protection from Fire C/AS1 (control of internal fire and smoke spread) Part 4, Clause 4.3. This means the insulation must either be non-combustible or have a Group Number no higher than 3 as defined in Appendix A of NZ Building Code Verification Method 2 for Protection from Fire C/VM2.

## 5.2.3 Existing insulation and installation

Underfloor insulation must be installed in accordance with this Manual, NZS 4246, manufacturers' instructions and best practice.

### Existing insulation

Provided the service provider considers that any existing underfloor insulation is effective and meets NZS 4246; no other underfloor insulation is required to be installed under the programme – see service provider assessment guidelines (Appendix B).

Existing insulation does not need to meet:

- the required product R-value as per Table 3;
- NZS 4246 clause 7.2.5 (existing insulation does not need to be designed for installation in open-perimeter floor spaces);
- the requirements of non-combustibility or Group Number that apply to new product to be installed in a service area.

## **Foil**

Provided the Service Provider considers that the foil underfloor insulation is effective; no other underfloor insulation is required to be installed under the programme – see service provider assessment guidelines (Appendix B).

Ineffective foil underfloor insulation must be removed before new underfloor insulation is installed.

Examples of ineffective foil insulation:

- foil product installed hard up against the flooring with no air gap between the foil and flooring;
- foil product upper surface, facing flooring, is no longer reflective
- foil product is ripped, parts of the foil are missing or there are gaps allowing airflow into the spaces above the foil.

Refer to NZECP 55 when inspecting, removing or working in the presence of foil insulation.

Retrofitting or repairing foil insulation in residential buildings with existing electrical installations is banned under section 26 of the Building Act 2004.

## **Space inaccessible after insulation**

Service providers are required to keep a detailed photographic record of work completed - particularly in areas where safety may be a concern.

## 5.3 Insulation of ceiling space walls

Ceiling space walls that form part of the thermal envelope must be insulated in every house except where it is unsafe to do so or where there is insufficient access.

Examples of such ceiling space walls are:

- internal walls in split-level or multi-storey houses between living spaces and the ceiling space;
- walls around recessed (dropped) ceilings;
- skylight shafts.

Figure 5 and Table 4 below set out the criteria for when ceiling space wall insulation is required.

### 5.3.1 Overview of ceiling space wall insulation requirements

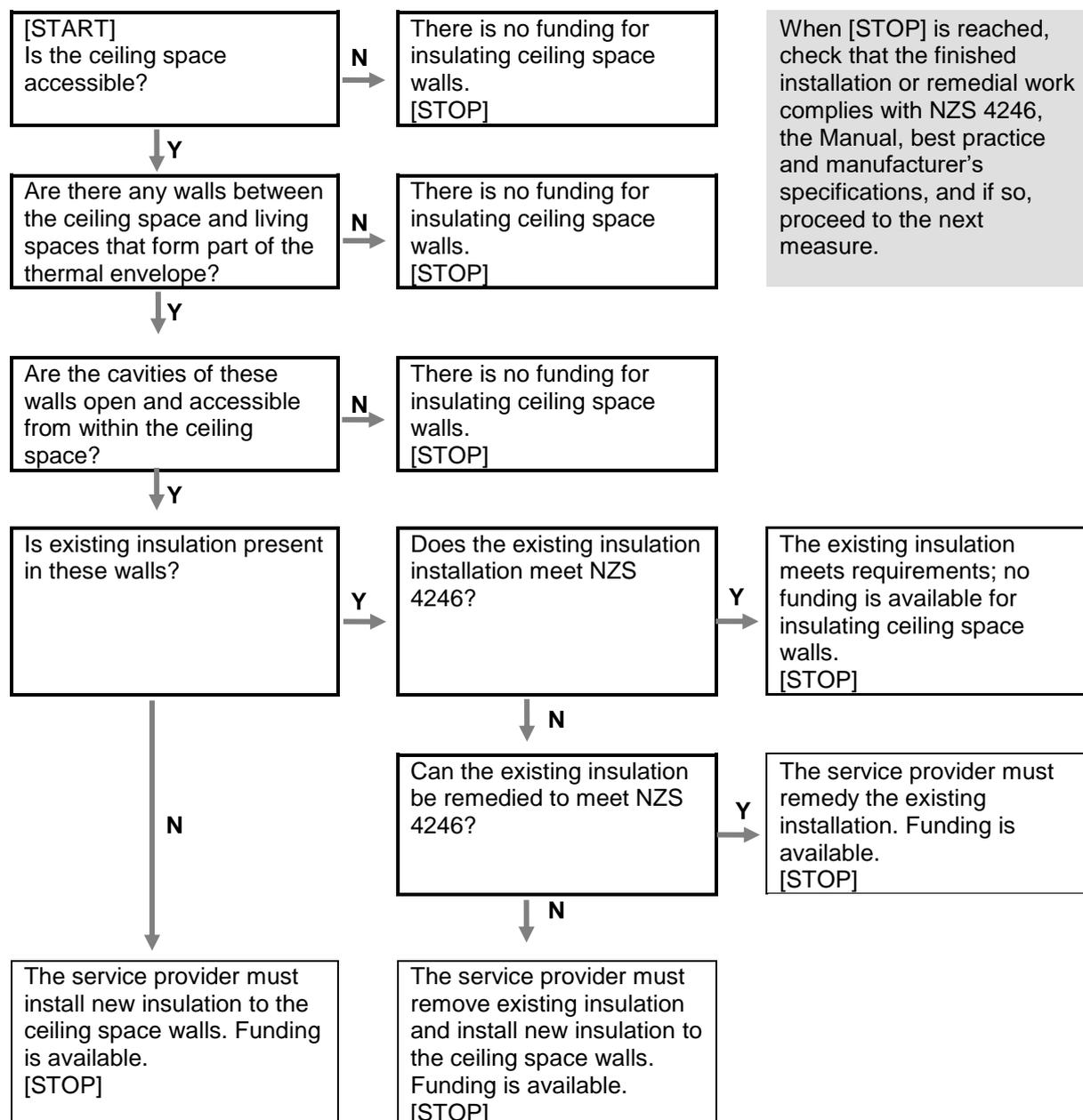


Figure 5: Overview of ceiling space wall insulation requirements

### 5.3.2 Ceiling space wall insulation product requirements

Products used for ceiling space wall insulation must be listed on EECA's List of Accepted Insulation Products and on the service provider's Funding Agreement.

Products used for insulating ceiling space walls must meet or may exceed the product R-value for the relevant climate zone set out in Table 4.

**Table 4: Required product R-value table for ceiling space wall insulation**

Climate zone	Required Insulation Product R-value
1, 2 & 3	1.8

Products must be fit for purpose and designed for insulating walls that remain unlined on the side facing the ceiling space. Refer to manufacturer's instructions.

### 5.3.3 Installation

Ceiling space wall insulation must be installed in accordance with this Manual, NZS 4246, manufacturers' instructions and best practice.

The insulation shall be permanently fastened into place, ensuring full contact of the insulation with the wall lining, without undue compression of the insulation. Strapping may be installed horizontally at intervals no greater than 300 mm to support the insulation.

## 5.4 Insulation of subfloor space walls

Subfloor space walls that form part of the thermal envelope must be insulated in every house except where it is unsafe to do so or where there is insufficient access. For example, this includes internal walls in split-level or multi-storey houses between living spaces and the subfloor space.

Figure 6 and Table 5 below set out the criteria for when subfloor space wall insulation is required.

### 5.4.1 Overview of subfloor space wall insulation requirements

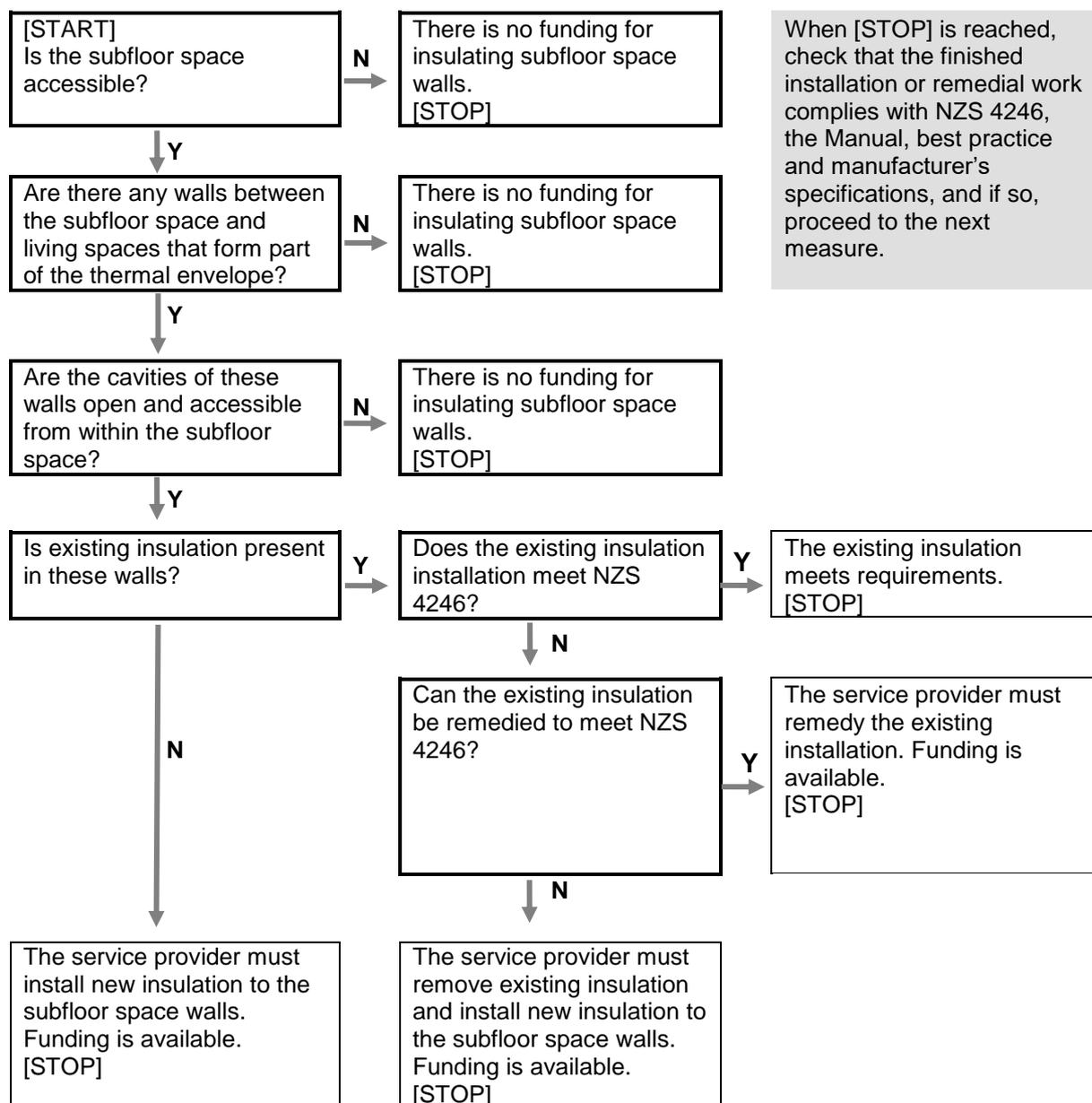


Figure 6: Overview of subfloor space wall insulation requirements

## 5.4.2 Subfloor space wall insulation product requirements

Products used for subfloor wall insulation must be listed on EECA's List of Accepted Insulation Products and on the service provider's Funding Agreement.

Products used for insulating subfloor space walls must meet or may exceed the product R-value for the relevant climate zone set out in Table 5.

**Table 5: Required product R-value table for subfloor space wall insulation**

Climate zone	Required Insulation Product R-value
1, 2 & 3	1.8

Products must be fit for purpose and designed for insulating walls that remain unlined on the side facing the subfloor space. In particular, the insulation product must be suitable for the environment of the subfloor space, including potentially high levels of air movement and humidity. Refer to manufacturer's instructions.

## 5.4.3 Installation

Subfloor space wall insulation must be installed in accordance with this Manual, NZS 4246, manufacturers' instructions and best practice.

The insulation shall be permanently fastened into place, ensuring full contact of the insulation with the wall lining, without undue compression of the insulation. Strapping may be installed horizontally at intervals no greater than 300 mm to support the insulation.

## 5.5 Pipe lagging in the ceiling space

In climate zone 3 and in other locations prone to freezing, lagging of the full length of exposed hot and cold water ceiling space pipes (i.e. pipes protruding above the ceiling insulation) is mandatory. Funding is available.

In climate zones 1 & 2, if freezing occurs regularly, service providers should note this on the assessment form.

For houses that do not regularly experience freezing in climate zones 1 & 2, full length pipe lagging is not an optional measure and funding is not available, but the lagging may be installed at the homeowner's cost; see other service in 4.3.

Figure 7 below sets out the criteria for when pipe lagging in the ceiling space is required.

### 5.5.1 Overview of pipe lagging in ceiling space requirements

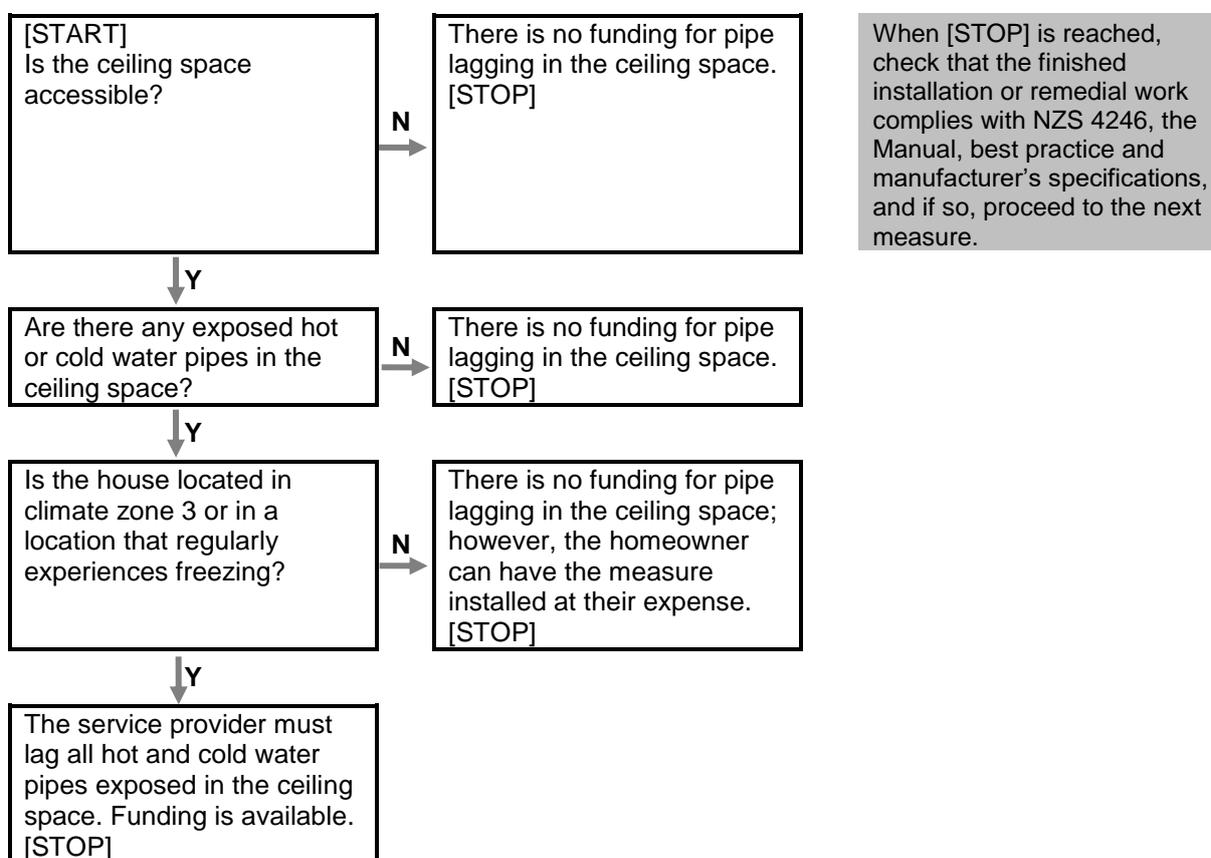


Figure 7: Overview of pipe lagging in ceiling space requirements

### 5.5.2 Products

Pipe lagging products must be listed in the service provider's Funding Agreement. These products must have a minimum R-value of 0.3 or be made of insulation material (e.g. foam, wool or fibreglass) with a minimum thickness of 12mm.

### 5.5.3 Installation

Pipe lagging must be installed in accordance with NZS 4246 and best practice. When lagging pipes particular attention must be paid to the lagging of the joints and bends.

## 5.6 On-ground moisture barrier

The installation or remediation of on-ground moisture barriers is an optional measure and funding is available for houses with suspended floors over an enclosed subfloor space.

### 5.6.1 Overview of on-ground moisture barrier requirements

Figure 8 below sets out the criteria for when subfloor space wall insulation is required.

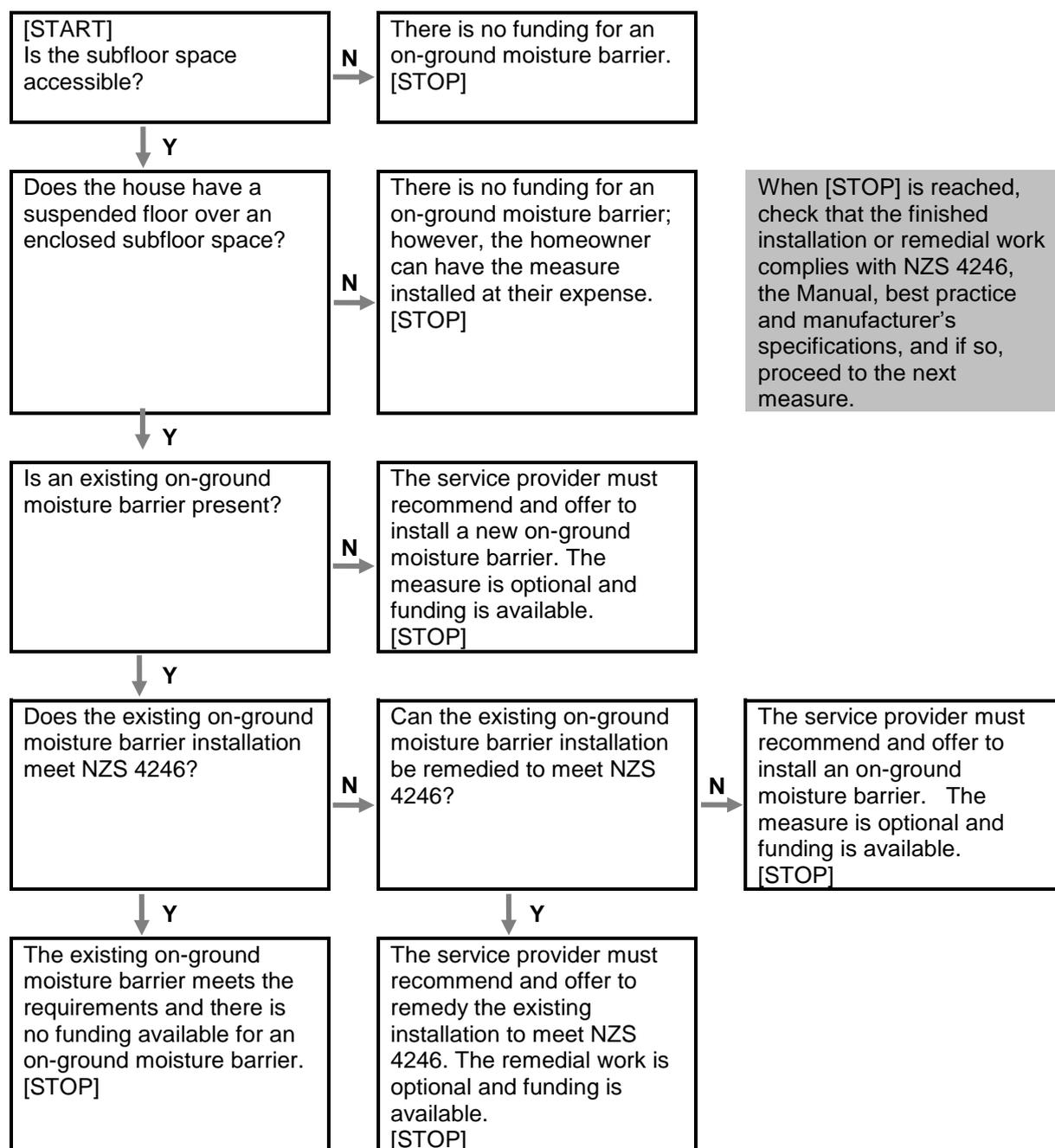


Figure 8: Overview of on-ground moisture barrier requirements

## 5.6.2 What is an enclosed subfloor space?

A subfloor space is considered enclosed where the airflow in and out of the subfloor space is obstructed by either:

- a masonry foundation wall
- other claddings such as cement board or a solid timber skirt
- attached structures (such as an adjacent part of the same building, an attached building or attached garage or carport).

In the above situations, funding is available regardless of:

- the number and size of any subfloor vents that may be present
- whether the subfloor soil appears dry or not.

A subfloor space is not considered enclosed where, on at least two sides, its perimeter is either open, has trellis cladding or continuous slots between baseboards. Funding is not available in such situations.

## 5.6.3 Products

An eligible product for an on-ground moisture barrier must be polythene, not polyvinyl chloride (PVC), with a minimum thickness of 250 microns.

## 5.6.4 Installation

On-ground moisture barriers must be installed in accordance with NZS 4246 and best practice.

Before installation, the service provider must check the entire subfloor area for signs of storm or surface water entering the subfloor space, or leaking water or sewerage pipes. Any such deficiencies must be referred to the homeowner for remediation before installation of an on-ground moisture barrier. No funding is available for such repair work.

## 6 Performance & Management systems

The quality of installations is paramount to the success and credibility of the programme. Performance and management systems are an integral component of evaluating, validating, improving and verifying quality within the programme. Therefore the following systems and processes are a requirement.

### 6.1 Quality assurance systems

Service providers need to have internal quality and audit systems in place to monitor their performance and ensure that their staff and sub-contractors consistently deliver installations that meet programme requirements.

EECA recommends that the service provider develop and maintain well-defined policies that, as a minimum, outline how they intend to manage the following processes:

- communicate with homeowners / occupants;
- communicate with auditors;
- communicate and implement programme changes;
- provide training and advice;
- monitor performance;
- resolve complaints;
- address corrective action;
- develop, maintain and implement health and safety plans;
- retain records.

### 6.2 Forms

Service providers must complete a number of processes using the forms listed in Appendix A – Forms.

Service providers are encouraged to use EECA's templates but may develop their own forms (except in the case of the Declaration form), provided that all the information on the templates is included and collected. Service providers should consider whether to populate the Assessment and PIA form with types of electrical fittings.

Service providers and their subcontractors must retain records in accordance with the Funding Agreement and, on request, provide copies to EECA and auditors. All completed programme forms must be legible.

#### 6.2.1 Assessment

An assessment is a full inspection of a house to determine its suitability for an installation, and to identify which measures should be installed. This includes carrying out a detailed check of the property to determine whether the programme measures can be installed. At a minimum, service providers must collect all the information required to complete the assessment form (v7.0 – refer Appendix B).

Service providers must use their best endeavours to carry out an assessment within 20 working days of a homeowner requesting one.

Refer to Appendix A – Forms for more information about accessing templates.

## 6.2.2 Declaration

Declaration forms are used to confirm that the homeowner meets the project eligibility criteria (Refer to Schedule A of the Funding Agreement) and approves the work to be undertaken and agrees to part fund the retrofit. It is mandatory for the homeowner to provide this information.

The declaration forms must be submitted, along with the post installation audit form, when the service provider makes a claim for payment for the house.

Refer to Appendix A – Forms for information about accessing the template.  
Service providers are not permitted to develop their own declaration forms.

## 6.2.3 Approval for work

All contracts for installations are between the homeowner and the service provider. The contract will be based on an agreement in the form of an approval for work form or quote (which must be signed by the homeowner and the service provider prior to installation) and a completion certificate or invoice which must be provided to the homeowner on completion of the installation. Under the programme the installation is considered complete once the post installation audit has been completed and any necessary remedies have occurred.

The approval for work specifies the measures that the service provider has recommended should be installed in the house, the cost of installation and who covers the costs (i.e. EECA, third-party funder, homeowner). By signing an approval for work the homeowner accepts the offer and consents to the work being carried out. Service providers may offer to undertake any work requested by the homeowner during the assessment, irrespective of whether or not the homeowner signs an approval for work. However, unless the homeowner signs an approval for work and the installation is eligible to be carried out under the programme, any such work will be at the homeowner's expense.

The service provider is not required to submit the approval for work to EECA, but copies of a form for each property should be retained, and on request, copies provided to EECA or its auditors.

Refer to Appendix A – Forms for information about accessing a template.

### Unintended consequences

When offering an approval for work, service providers may wish to inform the homeowner that the installation of measures under the programme may have unintended consequences such as:

- Shrinking floorboards because the indoor environment becomes warmer and drier;
- Freezing and/or bursting hot or cold water pipes in the ceiling space because less heat reaches the ceiling space;
- Condensation forming on the underside of roofing or ceiling material or within walls, particularly in colder climates. (e.g. this may occur where roofs are not lined with building paper or a membrane. Condensation can drip onto the insulation material and potentially damage the ceiling lining).

## 6.2.4 Completion certificate

A completion certificate is required to complete the contract between the homeowner and the service provider (i.e. in conjunction with an approval for work). The completion certificate provides warranties and guarantees for the installation.

The service provider must leave a finished completion certificate with the homeowner once the installation has been finalised; i.e. after the post installation audit.

The service provider is not required to submit the completion certificates to EECA, but a copy of each certificate must be retained, and on request, copies provided to EECA or its auditors.

Refer to Appendix A – Forms for information about accessing a template.

## 6.2.5 Post installation audits

A service provider must carry out a post installation audit using the post installation audit form. This activity must be completed within five working days of an installation.

The service provider must sign and date the post installation audit form as a declaration that the installation meets all the requirements of their Funding Agreement and this Manual.

Any serious installation matters found in the course of conducting a post installation audit must be corrected by the service provider immediately, and any other installation matters must be corrected prior to making a claim.

Post installation audit forms must be submitted when the service provider makes a claim.

A post installation audit template is provided in Appendix C.  
Also see Appendix A – Forms for more information about accessing templates.

## 6.3 Auditing

In addition to a service provider's own monitoring and quality assurance systems, EECA operates an audit process to provide assurance that installations comply with requirements.

EECA engages auditors to conduct audits of service providers' installations.

When an installation matter is found EECA may, at its discretion, schedule additional audits of service providers' installations.

Selection of houses for audit may be based on factors which contributed to the matter, for example, the individual who completed the post-installation audit, or the region of operation.

## 6.4 Types of installation audits

- Regular audits: A regular audit includes evaluation and inspection of all mandatory measures, and optional measures if installed, under the programme and may include reviewing service providers' documentation. There is no charge to service providers for this audit.
- Re-audits: EECA may engage an auditor to carry out a re-audit to verify that any installation matter found during an audit has been corrected. The service provider pays for all costs associated with re-audits.
- Special audits: The nature and scope of special audits are at EECA's discretion and may not be based on the typical audit process. The service provider may be charged for this audit.

## 6.5 Attendance of service providers at audits

Auditors must invite service providers to be present for all audits. Service provider attendance is a mandatory. The auditor may request copies of documents relating to the property to be audited from the service provider.

When a service provider attends an audit, they and the auditor should establish in advance which of them will explain audit findings to the homeowner.

If a serious installation matter is found the auditor will notify EECA and the service provider as soon as practicable. Once the service provider is notified by either EECA or the auditor, they have 48 hours to complete the corrective action for a serious installation matter that was unable to be made safe or made good at an audit.

## 6.6 Corrective action

If, as a result of an audit, a service provider is notified of an installation matter they are required to undertake appropriate corrective action:

- In the case of a serious installation matter, corrective action must be taken within 48 hours of the service provider being notified.
  - However in the case where the serious installation matter was made safe, the service provider has 20 working days;
  - And, in the case where the serious installation matter was made good the service provider is not required to return to the property to make good the serious installation matter.
- In the case of other installation matters, corrective action must be taken within 20 working days of the service provider being notified.

Service providers must explain the reasons for corrective action and any re-auditing to the homeowner. The service provider should also advise the homeowner that an auditor may contact the homeowner to make an appointment for a re-audit.

Service providers are required to respond in writing to installation matters; this obligation is completed through GEM. EECA may also request a formal written response.

Service providers must investigate their own systems and processes to establish the cause of the installation matter that has arisen, and report through GEM a summary of the steps taken to prevent similar matters occurring in the future.

## 7 References

References were correct when this version of the Manual was published.

- **Building Act 2004**  
[http://www.legislation.govt.nz/act/public/2004/0072/latest/DLM306036.html?search=ts\\_act\\_building+act\\_rese&p=1&sr=1](http://www.legislation.govt.nz/act/public/2004/0072/latest/DLM306036.html?search=ts_act_building+act_rese&p=1&sr=1)
- **BRANZ Appraisals** (Independent assessments of building products, materials, systems or methods of design or construction)  
[https://www.branz.co.nz/cms\\_display.php](https://www.branz.co.nz/cms_display.php)
- **Consumer Guarantees Act 1993**  
[http://www.legislation.govt.nz/act/public/1993/0091/latest/DLM311053.html?search=ts\\_act\\_consumer+guarantees+act\\_rese&p=1&sr=1](http://www.legislation.govt.nz/act/public/1993/0091/latest/DLM311053.html?search=ts_act_consumer+guarantees+act_rese&p=1&sr=1)
- **Electrical Act 1992**  
[http://www.legislation.govt.nz/act/public/1992/0122/latest/DLM281858.html?search=qs\\_act\\_electrical\\_rese&p=1&sr=1](http://www.legislation.govt.nz/act/public/1992/0122/latest/DLM281858.html?search=qs_act_electrical_rese&p=1&sr=1)
- **Electrical (Safety) Regulations 2010**  
<http://www.legislation.govt.nz/regulation/public/2010/0036/latest/DLM2763506.html>
- **Energy Efficiency & Conservation Authority** [www.eeca.govt.nz](http://www.eeca.govt.nz)
- **ENERGYWISE™** <http://www.energywise.govt.nz/>
- **Fair Trading Act 1986**  
[http://www.legislation.govt.nz/act/public/1986/0121/latest/DLM96439.html?search=ts\\_act\\_fair+trading+act\\_rese&p=1&sr=1](http://www.legislation.govt.nz/act/public/1986/0121/latest/DLM96439.html?search=ts_act_fair+trading+act_rese&p=1&sr=1)
- **List of Accepted Insulation Products** <https://www.energywise.govt.nz/funding-and-support/payment-options-for-insulation-and-heating/list-of-accepted-insulation-products/>
- **New Zealand Building Code Compliance Documents and Handbooks**  
<https://www.building.govt.nz/building-code-compliance/>
- **NZCEP 55:2016 New Zealand Electrical Code Of Practice For Managing Electrical Risks Associated With Electrically Conductive Thermal Insulation**  
<http://www.energysafety.govt.nz/documents/legislation-policy/electricity-act-regulations-codes/standards-and-codes-of-practice/nzcep-55-july-2016.pdf>
- **NZS 4246:2016 Energy efficiency - Installing bulk thermal insulation in residential buildings**
- <https://www.tenancy.govt.nz/assets/Uploads/Tenancy/NZS-42462016-Energy-efficiency-Installing-bulk-thermal-insulation-in-residential-buildings.pdf>
- <https://shop.standards.govt.nz/catalog/4246%3A2016%28NZS%29/view>
- **Insulation Product Approval Policy**  
<https://www.energywise.govt.nz/funding-and-support/payment-options-for-insulation-and-heating/list-of-accepted-insulation-products/>

## 8 Appendices

### Appendix A: Forms

These forms are an important part of the quality assurance framework for Warmer Kiwi Homes and are for use by service providers, auditors and EECA.

All forms must be completed in full in a legible manner.

#### 8.1 For service providers' use

##### 8.1.1 Assessment form

See ([Appendix B](#)) of this document and EECA's secure website for assessment form templates.

##### 8.1.2 Post installation audit form

See ([Appendix C](#)) of this document and EECA's secure website for post installation audit form templates.

##### 8.1.3 Declaration forms

The declaration forms are located on EECA's secure website.

##### 8.1.4 Approval for work guideline

An approval for work guideline template is located on EECA's secure website.

##### 8.1.5 Completion certificate

Completion certificate templates are located on EECA's secure website.

#### 8.2 For auditors' use

##### 8.2.1 Audit inspection form

For the audit inspection form, see *Guidelines for Auditors* stored on EECA's secure website.

##### 8.2.2 Audit inspection report

The report is an electronic form completed in GEM; see *Guidelines for Auditors* stored on EECA's secure website.

## Appendix B: Assessment Form v7.0

Homeowner details	
<input type="checkbox"/> Homeowner name	
House address	
Postcode	
Homeowner Phone	
Eligible house	<input type="checkbox"/> Yes <input type="checkbox"/> No
Was the House built prior to 2008?	<input type="checkbox"/> Yes <input type="checkbox"/> No
How many storeys in the House?	<input type="checkbox"/> 1 <input type="checkbox"/> 1.5 <input type="checkbox"/> 2 <input type="checkbox"/> 2.5 <input type="checkbox"/> 3
Climate Zone	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
Is the house in climate zone 3 or in an area that regularly experiences freezing?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Ceiling insulation (mandatory)																																																							
Is ceiling space accessible?	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																						
Are there any signs of water damage that need remedying?	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																						
Is there a foil roof underlay?	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																						
Determine what ceiling insulation solution is required?	<input type="checkbox"/> Total fill solution <input type="checkbox"/> Top up solution <input type="checkbox"/> Remedial work <input type="checkbox"/> None																																																						
Does the existing insulation require any work associated with the installation of the new product? If 'Yes', please record details in recommendations and comments section	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A																																																						
Ceiling area to be insulated																																																							
Total fill solution _____ m <sup>2</sup>	Top up Solution _____ m <sup>2</sup>																																																						
If electrical fitting(s) are present, specify type and quantity with and without required clearance. <table border="0"> <tr> <td>_____</td> <td>Yes#</td> <td>No#</td> </tr> </table>	_____	Yes#	No#	_____	Yes#	No#	_____	Yes#	No#	_____	Yes#	No#	_____	Yes#	No#	_____	Yes#	No#	_____	Yes#	No#	_____	Yes#	No#	_____	Yes#	No#	If electrical fittings cont... <table border="0"> <tr> <td>_____</td> <td>Yes#</td> <td>No#</td> </tr> </table>	_____	Yes#	No#																								
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Are chimney(s)/flue(s) present?	<input type="checkbox"/> Yes, metal flue(s) # _____ <input type="checkbox"/> Yes, brick chimney(s) # _____ <input type="checkbox"/> No																																																						
If 'Yes', is the chimney/flue decommissioned.	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																						
Are recessed spaces present in the ceiling space?	<input type="checkbox"/> Yes <input type="checkbox"/> No																																																						

<b>Ceiling space wall insulation</b> (mandatory)	
Are there any walls in the ceiling space that form part of the thermal envelope?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If 'Yes', are the cavities of these walls open and accessible from within the ceiling space?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Is existing insulation present in these walls?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Does the existing insulation require any remedial work? If 'Yes', please provide details.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Wall area to be insulated	_____m <sup>2</sup>
If electrical fitting(s) are present, specify type and quantity with and without required clearance.	
_____	Yes# _____ No# _____

<b>Pipe lagging</b> (mandatory to exposed ceiling space water pipes in zone 3 and where regular freezing occurs)	
Are/will pipes be exposed in the ceiling space of a climate zone 3 House, or a zone 1 or 2 House where regular freezing occurs?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If 'Yes', length required	_____m

<b>Underfloor insulation</b> (mandatory)	
Is the subfloor space accessible?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partial
Is there any existing underfloor insulation? If 'Yes', what is the type of insulation fitted?	<input type="checkbox"/> Yes, foil <input type="checkbox"/> No <input type="checkbox"/> Yes, bulk
If 'Yes, foil', is the existing foil still effective?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
If 'Yes, bulk', does the existing bulk insulation require any remedial work? If 'Yes', please provide details.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Does the subfloor have a continuous enclosed perimeter foundation?	<input type="checkbox"/> Yes, enclosed <input type="checkbox"/> No, open
Is there a service area in the subfloor space?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Underfloor area to be insulated	_____m <sup>2</sup>
If electrical fitting(s) are present, specify type and quantity with and without required clearance.	
_____	Yes# _____ No# _____

<b>Subfloor space wall insulation (mandatory)</b>	
Are there any walls in the subfloor space that form part of the thermal envelope?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If 'Yes', are the cavities of these walls open and accessible from within the subfloor space?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is existing insulation present in these walls?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does the existing insulation require any remedial work? If 'Yes', please provide details.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Is there a service area in the subfloor space?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Wall area to be insulated	_____ m <sup>2</sup>
If electrical fitting(s) are present, specify type and quantity with and without required clearance.	
_____	Yes# _____ No# _____

<b>On-ground moisture barrier</b>	
Are there any signs of leaking water or sewerage pipes in the subfloor space?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are there any signs of storm or surface water entering the subfloor space?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is there an existing on-ground moisture barrier?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If 'Yes', is it installed to NZS 4246	<input type="checkbox"/> Yes <input type="checkbox"/> No
If 'No', can it be remedied or should it be replaced?	<input type="checkbox"/> Remedy <input type="checkbox"/> Replace
Does the Q&A manual require you to recommend and offer installation of an on-ground moisture barrier?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If 'Yes', did you offer the homeowner the opportunity to have an on-ground moisture barrier installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Ground area to be covered, if applicable.	_____ m <sup>2</sup>

<b>Lower/higher specification products</b>	
Lower specification product(s) needed	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Provide details on reason, location, product and quantity required	
	_____ m <sup>2</sup>
Higher specification product(s) requested by homeowner	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Provide details on location, product and quantity required	
	_____ m <sup>2</sup>

<b>Homeowner tasks to be completed before installation can commence</b>	
Homeowner/occupant to remove stored objects – provide details	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Homeowner to fix plumbing/roof leaks – provide details	<input type="checkbox"/> Yes <input type="checkbox"/> N/A

<b>Recommendations and Comments</b>	
<b>Ceiling insulation</b>	
Install total fill solution	<input type="checkbox"/> Yes
Install top up solution	<input type="checkbox"/> Yes
Product and R-value	_____
Roof or plumbing leaks that need to be fixed before insulation can be installed	<input type="checkbox"/> Yes
Remedy	<input type="checkbox"/> Yes
<b>Ceiling space wall insulation</b>	
Install	<input type="checkbox"/> Yes
Product and R-value	_____
Remedy	<input type="checkbox"/> Yes
Remove foil	<input type="checkbox"/> Yes
<b>Underfloor insulation</b>	
Install	<input type="checkbox"/> Yes
Product and R-value	_____
Plumbing leaks or storm water issues need to be resolved prior to insulation being installed?	<input type="checkbox"/> Yes
Remedy	<input type="checkbox"/> Yes
Remove foil	<input type="checkbox"/> Yes
<b>Subfloor space wall insulation</b>	
Install	<input type="checkbox"/> Yes
Product and R-value	_____
Remedy	<input type="checkbox"/> Yes
<b>Pipe lagging (to exposed ceiling space water pipes)</b>	
Install	<input type="checkbox"/> In Ceiling
Remedy	<input type="checkbox"/> Yes



## Appendix C: Post Installation Audit Form

Service Provider and audit details	
Name of Service Provider (company)	
Date of installation	Date of Audit
Have you reviewed the assessment form for this property?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Have you reviewed, or participated in, a health and safety site assessment prior to completing this post installation audit?	<input type="checkbox"/> Yes <input type="checkbox"/> No

Homeowner details
Name
House address
Phone

Lower/higher specification products	
Lower specification product(s) needed	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Reason	
Location	
Quantity	_____ m <sup>2</sup>
Higher specification product(s) requested by homeowner	<input type="checkbox"/> Yes <input type="checkbox"/> N/A
Location	
Quantity	_____ m <sup>2</sup>

<b>Ceiling insulation</b>	
Was there any existing insulation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Provide details of type of any remaining existing insulation, including if still effective. If remedial work undertaken, record details in the ceiling comments box below.	
Was ceiling insulation installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Product installed (manufacturer, product-name, R-value)?	
	<b>Pass    Fail</b>
Is product installed on the funding agreement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Insulation installed in ceiling space with foil as roof underlay?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Is product installed the right product for the situation according to the programme requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Labels with product and installer information present and permanently fixed on site where they can be easily found?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Existing insulation refitted / levelled / damp insulation removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Gaps >50 mm width in existing insulation filled?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Separate piece of insulation over access hatch?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
If electrical fitting(s) are present, specify type and quantity with (Yes) and without (No) required clearance.	
_____	Yes# _____ No# _____
Insulation (new and existing) 50 mm from all outer faces of concrete or brick chimney(s) and 75 mm from all outer faces of metal flue(s)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Recessed space(s) insulated down walls and across ceiling space(s)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Any significant gaps, tucks or folds?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Are there any open air pockets between insulation and ceiling along perimeter and other edges (e.g. clearances)?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Any insulation touching roofing materials (25mm clearance between roofing and insulation material not maintained)?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Top plate covered if possible (while maintaining 25mm clearance to roofing material)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Insulation installed under header tank where required by NZS 4246?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Does ceiling installation meet the intent of NZS 4246?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Installation debris removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
	Quantity installed?
Quantity quoted? _____ m <sup>2</sup>	_____ m <sup>2</sup>
Ceiling comments (e.g. if not installed, explain why not)	

<b>Ceiling space wall insulation</b>	
Was ceiling space wall insulation installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Product installed (manufacturer, product-name, R-value)?	
	<b>Pass      Fail</b>
Is product installed on the funding agreement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Product permanently fastened into place with full contact with wall lining?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Insulation compressed?	<input type="checkbox"/> No <input type="checkbox"/> Yes
If electrical fitting(s) are present, specify type and quantity with and without required clearance. _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	Yes# _____ No# _____ Yes# _____ No# _____
Any significant gaps, tucks or folds?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Labels with product and installer information present and permanently fixed on site where they can be easily found?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does ceiling space wall installation meet the intent of NZS 4246?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Quantity quoted? _____m <sup>2</sup>	Quantity installed? _____m <sup>2</sup>
Ceiling space wall insulation comments (e.g. if not installed, explain why not)	

<b>Underfloor insulation</b>	
Any existing insulation that remains?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Provide details of type of any remaining existing insulation, including if still effective. If not effective, provide details why it has not been replaced by new insulation.	
Was underfloor insulation installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Product installed (manufacturer, product-name, R-value)?	
	<b>Pass      Fail</b>
Is product installed on the funding agreement?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If subfloor not fully enclosed, is product suitable for open-perimeter floor?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
If service area present, does product in service area meet Group Number no higher than 3, or is it non-combustible?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
All accessible areas done?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Labels with product and installer information present and permanently fixed on site where they can be easily found?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If electrical fitting(s) are present, specify type and quantity with and without required clearance. _____ _____ _____ _____	Yes# _____ No# _____ Yes# _____ No# _____ Yes# _____ No# _____ Yes# _____ No# _____
Product installed to bottom plate of exterior walls?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are clearances of approximately 100mm maintained around plumbing pipe penetrations through the floor?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Good friction fits?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Any significant gaps?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Insulation in full contact with underside of floor?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Insulation compressed?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Any fold downs too big with insulation hanging below floor joist level?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Has strapping been installed properly (if required)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Has stapling been installed properly (if required)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Insulation installed according to programme requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does underfloor installation meet the intent of NZS 4246?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Installation debris removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Quantity quoted? _____ m <sup>2</sup>	Quantity installed? _____ m <sup>2</sup>
Underfloor comments (e.g. if not installed, or not required, explain why not)	

<b>Subfloor space wall insulation</b>	
Was subfloor space wall insulation installed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Product installed (manufacturer, product-name, R-value)?	
	<b>Pass      Fail</b>
Is product installed on the funding agreement for use in subfloor space walls?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If service area present, does product in service area meet Group Number no higher than 3, or is it non-combustible?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Product permanently fastened into place with full contact with wall lining?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Insulation compressed?	<input type="checkbox"/> No <input type="checkbox"/> Yes
If electrical fitting(s) are present, specify type and quantity with and without required clearance.	Yes#      No# <hr/> Yes#      No# <hr/> Yes#      No# <hr/> Yes#      No# <hr/> Yes#      No#
Good friction fits?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Any significant gaps, tucks or folds?	<input type="checkbox"/> No <input type="checkbox"/> Yes
Labels with product and installer information present and permanently fixed on site where they can be easily found?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does subfloor space wall installation meet the intent of NZS 4246?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Quantity quoted? _____ m <sup>2</sup>	Quantity installed? _____ m <sup>2</sup>
Subfloor space wall insulation comments (e.g. if not installed, explain why not)	

<b>On-ground moisture barrier</b>	<b>Pass</b>	<b>Fail</b>
Was on-ground moisture barrier installed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
Does the Q&A manual recommend installation of on-ground moisture barrier?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Installed in accordance with NZS 4246 requirements?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Installation debris removed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Quantity quoted? _____ m <sup>2</sup>	Quantity installed? _____ m <sup>2</sup>	
On-ground moisture barrier comments		

<b>Pipe lagging</b>		<b>Pass</b>	<b>Fail</b>
Was pipe lagging in ceiling space installed in accordance with climate zone requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Fixed/taped properly?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Length quoted? _____ m	Length installed? _____ m		
Pipe lagging comments (e.g. if not installed, explain why not)			

<b>Overall comments</b>

<b>Declaration of person conducting post installation audit</b>	
I declare and undertake that the information in this post installation audit form is accurate and complete to the best of my knowledge.	
Signature	
Name (please print)	
Company name	Date