Tenancy Services

Healthy homes standards
Insulation

Ceiling and underfloor insulation has been compulsory in all rental homes since 1 July 2019. The healthy homes insulation standard builds on the current insulation requirements. Under the healthy homes insulation standard, existing insulation may need to be topped up or replaced if it is not in a reasonable condition. In most situations, existing ceiling insulation needs to be at least 120mm thick. If ceiling insulation needs to be topped up, it needs to meet minimum R-values* for ceiling insulation as set out in the 2008 Building Code. Underfloor insulation needs a minimum R-value of 1.3.

* 'R' stands for resistance – an R-value is a measure of how well insulation resists heat flow.

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Contents

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About this guide

A landlord who rents a property under the *Residential Tenancies Act 1986* (RTA) will need to ensure their property meets the healthy homes standards. This requirement comes into force on different dates for different types of tenancies from 1 July 2021.

All private rental properties must comply with the healthy homes standards by a certain time. For more information visit: **www.tenancy.govt.nz/healthy-homes/healthy-homes-compliance-timeframes**. All boarding houses must have complied by 1 July 2021. All houses rented by Kāinga Ora (formerly Housing New Zealand) and registered Community Housing Providers must comply by 1 July 2024.

This guidance document provides advice for assessing whether a property is compliant with the insulation standard of the *Residential Tenancies (Healthy Homes Standards) Regulations 2019*. This guide works alongside the online **insulation decision tool**[1] available at www.tenancy.govt.nz. Use this tool to figure out if you need to upgrade your insulation to meet the healthy homes standard.

This legislation allows landlords to retrofit insulation themselves, providing the insulation product meets or exceeds the required R-values and that it is fitted to meet the requirements of the **New Zealand Standard 4246:2016**.[2] However, landlords may choose to employ a reputable installer where they have doubts about achieving the required quality of installation, or where there is any doubt about whether exemptions apply.

1 tenancy.govt.nz/maintenance-and-inspections/insulation/insulation-tool/
2 tenancy.govt.nz/assets/Uploads/Tenancy/NZS-42462016-Energy-efficiency-Installing-bulk-thermal-insulation-in-residential-buildings.pdf

Things to do

- Safety First! If inspecting or installing insulation, make sure the space is safe before you enter it.
- If you are moving around the roof space, only stand on the framing. If you are entering the subfloor, particularly if it has foil insulation, turn the power off at the mains to reduce the chances of electrocution – see the New Zealand Electrical Code of Practice, NZECP 55, for more information.
- Stay out of spaces where there are known health and safety hazards – e.g. asbestos dust, poorly installed or loose electrical wires, sharp objects such as glass or nails, hazardous substances such as old building materials and rubbish, sewerage contamination or toxic gases from geothermal activity. Get these sorted out first.
- Use the **insulation tool**[3] to figure out your insulation compliance and use this guidance document if you need additional information or if you think an exemption may apply to your home.
- If you are installing insulation, make sure you read **NZS 4246:2016**[4], which is free to access through the Tenancy Services website. Insulation must be installed according to this standard to be compliant.
- If your property is part of a unit title, consult your body corporate operational rules before beginning any work.
- If you are renting out a heritage home or a home where heritage protection rules apply, contact your local authority about any rules or restrictions on work that can be done to the property.
- If you have any doubts about the existing insulation or whether insulation can be installed safely and effectively get a professional installer in.
- If a professional installs new insulation, ask for a certificate or similar to show that they have installed it to meet the RTA requirements. Keep this with the maintenance files for the property.

3 tenancy.govt.nz/maintenance-and-inspections/insulation/insulation-tool
4 tenancy.govt.nz/assets/Uploads/Tenancy/NZS-42462016-Energy-efficiency-Installing-bulk-thermal-insulation-in-residential-buildings.pdf

What's changed with insulation requirements?

Ceiling and underfloor insulation has been compulsory in all rental homes since 1 July 2019, under the ***Residential Tenancies (Smoke Alarms and Insulation) Regulations 2016***.[5] These insulation requirements will continue to apply until the relevant compliance date is reached for the healthy homes standards (see 'About this guide' on previous page).

Under the 2016 regulations, existing insulation had to meet certain R-values (an R-value is a measure of how well insulation resists heat flow) and be in reasonable condition, unless an exemption applies. If a rental home did not have existing insulation, then new insulation was required to be installed before 1 July 2019. If a rental home had existing insulation but did not meet the minimum R-values (or ceiling insulation was less than 70mm thick) or the insulation was not in a reasonable condition, then it was also necessary for new insulation to be installed by 1 July 2019 (see 'Installing new insulation' section on page 10).

The healthy homes insulation standard increases the minimum standard for existing insulation. This means that some homes that did not require new insulation under the 2016 requirements may require a ceiling insulation 'top-up' or new underfloor insulation under the healthy homes standard.

The healthy homes insulation standard requires all rental homes to have insulation consistent with the 2008 building code or, for existing insulation it must be at least 120mm thick.

If a home has less than 120mm of ceiling insulation, then this must be topped up, or new insulation installed in order to meet the healthy homes minimum R-value requirements, which are consistent with the 2008 building code (see 'Installing new insulation' section on page 10). Topping up is installing new insulation on top of existing insulation. Any new insulation should be installed to meet the minimum R-value requirements.

5 legislation.govt.nz/regulation/public/2016/0128/16.0/DLM6856201.html

Ceiling insulation that is less than 120mm thick is acceptable if the landlord can prove:

- the insulation's R-value met the minimum R-values (2.9 or 3.3 depending on the climate zone) when it was installed, and
- the insulation's thickness has not degraded by more than 30% (compared to when it was installed).

If existing underfloor foil insulation is ripped, not shiny or there are gaps, it will not meet the requirements of the insulation standard (see 'Foil insulation' section on page 8). It will need to be replaced with new underfloor insulation that is not foil and that meets the required minimum R-value (see 'Installing new insulation' section on page 10).

Landlords who installed new insulation to meet the ***Residential Tenancies (Smoke Alarms and Insulation) Regulations 2016*** will likely meet the healthy homes insulation standard, provided the insulation remains in a reasonable condition. This is because the minimum R-values for new insulation have not changed under the healthy homes insulation standard.

While new insulation is expected to last for decades, it's a good idea to check that it is still in reasonable condition. This is particularly relevant if there is a chance insulation may have been disrupted or damaged in any way – for example, if you've had work done in the roof space or subfloor space, or if there have been any leaks or pest infestations.

Assessing existing insulation installed before 1 July 2016

You can either check for yourself if your insulation meets the standard or seek an assessment from an insulation professional. If checking yourself, you will need to safely enter the ceiling cavity and subfloor space to measure your insulation and assess its condition. If there is another domestic living space immediately above or below the home, the ceiling/floor in between does not require insulation.

Assessing ceiling insulation

Homes built before 2008 that did not have to install new insulation under the 2016 regulations because there was already existing insulation which met requirements will in most cases need to 'top-up' their ceiling insulation to meet the healthy homes insulation standard.

Existing ceiling insulation must be at least 120mm thick in all areas, except for where safety clearances are required, so take several measurements throughout the area to ensure the insulation is thick enough. If there are multiple layers of insulation, the total thickness of all layers must be at least 120mm.

The insulation also needs to be in reasonable condition, which is explained further in the 'Meaning of reasonable condition' section on page 8.

Ceiling insulation that is less than 120mm thick is acceptable if the landlord can prove:

- the insulation's R-value met the minimum R-values (2.9 or 3.3 depending on the climate zone) when it was installed, and
- the insulation's thickness has not degraded by more than 30% (compared to when it was installed).

Assessing underfloor insulation

While the minimum underfloor insulation R-values increase under the healthy homes standards, in practice, homes that do not have foil underfloor insulation and that met the ***Residential Tenancies (Smoke Alarms and Insulation) Regulations 2016***[6] will in most cases meet the healthy homes insulation standard.

Domestic living spaces with suspended floors must have underfloor insulation that had an R-value of at least 1.3 when it was installed. The insulation must be in reasonable condition. In most cases, concrete floors do not need underfloor insulation because they are not usually suspended floors or they are above a habitable space, such as apartments. Suspended concrete floors that are not above a habitable space need insulation where reasonably practicable.

Determining R-values for underfloor insulation using records

The best way to determine the R-value of existing insulation is by using records from when the insulation was installed or by getting an assessment from an insulation professional. Records can include a certificate from the installer, a product label fixed to the install location (such as on a building beam), an invoice from installation or building records from your local council.

If the R-value of the insulation is unknown and you do not have any records, Table 1 gives an indication of the R-value based on the thickness of common insulation products.

Table 1: Assumed R-values based on the thickness

Thickness (mm)	Polyester blankets or segments (R-Value)	Mineral/glass fibre blankets or segments (R-Value)	Polystyrene (R-Value)
50	0.8	1	1.2
60	1	1.2	1.4
70	1.2	1.3	1.7
75	1.3	1.4	1.8

Foil insulation

Existing foil insulation that is in reasonable condition will meet the healthy homes standards only if it meets the criteria for an R-value exemption (see 'Partial exemption for certain underfloor insulation' on page 12).

Between 1978 and 2016, draped foil insulation was an acceptable solution for meeting energy efficiency requirements in the Building Code. If your house was built during this period, and the foil insulation remains in reasonable condition and you have compliance documents to prove the home was built to meet the requirements of the time then this exemption will apply.

In many cases, existing foil insulation will not meet the healthy homes insulation standard.

Where foil insulation is not in reasonable condition (such as where it is damaged,ripped or no longer shiny), or it doesn't meet the criteria for an R-value exemption, it needs to be replaced with new underfloor insulation that is not foil and that meets the required minimum R-value (see 'Installing new insulation' section on page 10). This can be easily damaged.

Retrofitting or repairing foil insulation has been prohibited under the Building Act since 1 July 2016 because of the high risk of electric shock.

6 legislation.govt.nz/regulation/public/2016/0128/16.0/DLM6856201.html

Meaning of 'reasonable condition'

When determining whether insulation is in a reasonable condition, consider:

- the effect the condition of the insulation has on its performance
- the effect of any dampness, damage, degradation, or displacement
- the condition of any other materials that support the function of the insulation, such as strapping or staples.

A good set of rules to follow is that insulation must be free of:

- dampness, mould, water damage
- rips, tears
- gaps in the insulation coverage, except where safety clearances are required
- (for ceiling insulation) settlement or compression below 120mm of depth
- (for foil underfloor insulation) gaps or holes that allow airflow into the spaces above the foil
- vermin or bird nests
- other contamination
- any other damage or compromise to the condition of the insulation.

For underfloor insulation other than foil, the insulation must maintain contact with the underside of the floor to be considered in reasonable condition. This is to ensure the insulation meets the requirements of **NZS 4246:2016.**

There are a few things you can do to remedy existing insulation that is not in reasonable condition.

Addressing damaged or degraded insulation	It may be more efficient to get professionals in to assess whether to do patch replacements of the affected insulation, or whether it would be more efficient to retrofit insulation throughout the entire applicable space.
Addressing gaps	Existing insulation must have the required safety clearances in the insulation, such as those around downlights, downlight transformers or heating appliance flues (see NZS 4246:2016 for more information about required clearances). However, there must not be visible gaps between the insulation and the edge of the framing or between pieces of insulation. Gaps can be filled by either moving displaced existing insulation back into place or filling gaps with new insulation to the required R-value.
Addressing dampness	Insulation can become damp from moist subfloors, extractor fans that vent into the roof space, or leaks in the roof space. Some insulation will be permanently damaged by moisture and will need replacing. In all cases, the source of any moisture should be addressed first and then damaged insulation should be replaced, particularly if it has settled or has mould growth.
Compression or settling to below 120mm or below 70% of its initial thickness (if it is high performing)	Insulation can settle over time or be disturbed and compress. This can greatly reduce its effectiveness. Where ceiling insulation has settled or been compressed to below 120mm of thickness, it does not meet the requirements of the insulation standard as it is no longer considered to be in a reasonable condition. Where insulation has settled or been compressed, it should be topped up or replaced to ensure the required R-value is met.

Installing new insulation

If the existing insulation is in reasonable condition but does not meet the minimum R-value requirements, then the insulation must be 'topped up' or replaced to achieve the required minimum R-values. Landlords can choose to install insulation themselves or employ a professional installer. All insulation must be installed in accordance with **New Zealand Standard 4246:2016**[7]. More information on installing insulation is available from **EECA**[8].

R-value requirements

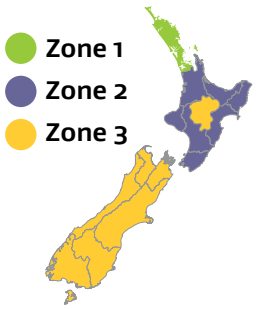
'R' stands for resistance – how well insulation resists heat flow. The higher the R-value, the better the insulation performs. A rental property must have ceiling and underfloor insulation that meets the R-value requirements above and below all domestic living spaces except where an exemption applies or where another domestic living space is immediately above or below the space.

R-value requirements are different depending on which climate zone the rental property is located in. The required R-values can be seen in the map of climate zones. A more detailed description of the climate zone boundaries can be found in New Zealand Standard 4246:2016.

The R-value of an insulation product at a set thickness will be displayed on the packaging.

ZONE 1 & 2	ZONE 3
Ceiling R 2.9	Ceiling R3.3
Underfloor R 1.3	Underfloor R 1.3

Map of climate zones



If the insulation consists of two or more products installed on top of each other that are in reasonable condition, the R-value is the total of the R-values of the products added together.

7 tenancy.govt.nz/assets/Uploads/Tenancy/NZS-42462016-Energy-efficiency-Installing-bulk-thermal-insulation-in-residential-buildings.pdf
8 energywise.govt.nz/at-home/insulation/

Exemptions

There are three general exemptions that apply to all the healthy homes standards. There are also three specific exemptions that apply only to the insulation standard or parts of the insulation standard.

For complete information about exemptions, see the **Tenancy Services website**[9].

The general exemptions are:

1. Properties which are sold and immediately rented back to the former owner-occupier for a period of up to 12 months. Note: the exception lasts for 12 months from the change of ownership of the property.
2. Properties where the landlord intends to demolish the property or substantially rebuild parts of the property and has applied for the relevant resource consent or building consent before the healthy homes compliance date. This exemption lasts for up to 12 months from the healthy homes compliance date and may end earlier in certain circumstances (such as where the consent lapses or is terminated, or where the application is refused). If requested, the landlord will need to provide evidence that they have applied for the relevant resource consent or building consent for redevelopment work.
3. If the landlord doesn't own the whole of the tenancy building, and in order to comply, the landlord needs to provide or install something in a part of the building they do not own, or access part of the building they do not own. In this situation, the landlord needs to take all reasonable steps to ensure compliance. If they cannot achieve complete compliance they must take all reasonable steps to ensure the rental property complies as much as possible.

Specific exemptions

While insulating homes is good, the healthy homes standards recognise that not all homes are built the same and some have features that are not reasonably practicable to insulate. The legislation allows for the following three specific insulation exemptions.

9 tenancy.govt.nz/healthy-homes/exemptions-to-the-healthy-homes-standards

Exemption where work is impracticable or unsafe

Some areas of some homes may be impracticable or unsafe to access due to their design, limited access, potential for substantial damage, or health and safety reasons.[10] There is an exemption for parts of homes where a professional installer is unable to access and/or insulate, until such a time as this becomes possible (for example when a property is reroofed).

The following scenarios demonstrate situations where impracticability exemptions may apply. The exception applies, in particular, where:

- an experienced professional installer of insulation cannot access the location to install the insulation without substantial building work or causing substantial damage to the premises
- an experienced professional installer of insulation cannot install the insulation at the location without creating risks to the health or safety of any person that are greater than the risks that are normally acceptable when insulation is being installed by an experienced professional installer of insulation
- it is otherwise not reasonably practicable for an experienced professional installer of insulation to install the insulation at the location.

A rental home does not meet this exemption where a roof space or subfloor space can be made accessible through the installation of an access hatch or similar. See 'What is not exempt' on page 14.

The exemptions may include work that is of excessive scale, as determined by a professional installer.

Partial exemption for certain underfloor insulation

If the rental home has existing underfloor insulation that was installed when the home was built or converted and you have a copy of any compliance documents that shows the home met the requirements of the time, such as code compliance certificate, certificate of acceptance or another relevant compliance document, then providing the insulation remains in a reasonable condition the home meets the healthy homes underfloor insulation requirements.

If this exemption is met, the underfloor insulation (including foil insulation) is not required to have been installed according to New Zealand Standard 4246:2016 and is not required to meet the R-value requirement. If a landlord is relying on this exemption, a tenant can request to see the documentation or compliance document. If a landlord fails to produce the evidence within 10 working days, the exemption ceases to apply.

Exemption for ceilings and floors directly above or below habitable spaces

The final exemption applies to areas of ceilings or floors where directly above or below there are other habitable spaces (e.g another floor of the same property or another apartment). These areas do not require insulation to meet the healthy homes insulation standard.

10 While a landlord is not required to use a professional installer to install the insulation, if a landlord is unable to do the work themselves and it is reasonably practicable to install the insulation, then they must commission someone to do the work on their behalf.

Insulation in specific situations

Inaccessible roof spaces

Skillion roofs and very low pitched roofs typically have no way to access the cavity to insulate them unless the ceiling lining or the roofing is removed and replaced. However, at the point when the roof or ceiling lining is replaced the cavity will become accessible and, where insulation does not meet the requirements, must be insulated to the required standards as set out in the map of climate zones on page 10.

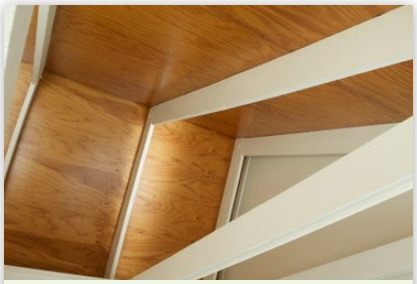


Figure 2: Skillion ceiling

Figure 3: Very low pitched roof

Figure 4: Bitumen membrane skillion roof

Figure 5: Lean-to skillion roof

Figure 6: Skillion ceiling

Inaccessible subfloors

Areas of homes with concrete slab on ground floors, or suspended floors that sit directly above the habitable spaces of neighbouring units are not required to be insulated.

Areas of subfloor spaces that are too low to the ground for a professional installer to insulate safely are not required to be insulated until such a time as it becomes possible (e.g. when replacing floorboards, repiling).

Figure 7: Areas of subfloor space with insufficient clearance

Figure 8: Areas of subfloor space with insufficient clearance

Low roof clearances

Where parts of the roof are too low to install the required thickness of insulation, a lower performance product may be installed in those areas. For example, a thinner ceiling insulation product may be required along the edges of the roof space because the insulation must maintain a clearance of at least 25 mm from the roof underlay, as per NZS 4246:2016.

Apartments & multi-units

Where the habitable space of another unit is directly above or below a ceiling or floor, this area does not need to be insulated.

In buildings with Bodies Corporate, owners of units will likely need to seek permission to alter the thermal envelope of the exterior of the building. Bodies Corporate might consider incorporating the installation of insulation into their long term maintenance plans, particularly if a building consent is required to install insulation.

Outbuildings & garages

Uninhabited outbuildings such as sheds and standalone garages are exempt from the insulation requirements. However, where a garage is located directly beneath habitable spaces, the underside of the floor between the garage and the habitable space needs to be insulated.

What is not exempt

Where there is no existing designated access point into an otherwise accessible roof cavity or subfloor space, landlords are expected to create one to insulate the space so long as it does not require significant building work. This may be temporary (e.g. removing a fibre cement sheet from an enclosed subfloor perimeter wall), or permanent (e.g. a hatch into a ceiling space).

Habitable spaces outside the main dwelling

Where a property includes structures outside the main dwelling that are consistently used as a habitable space, such as a caravan, studio or sleepout, these require insulation where it is reasonably practicable to install.

Getting support

If you are unsure about any work that needs to be done, or how to do the work safely, it is strongly recommended you contact a licensed building practitioner or a professional insulation installer. Alternatively, you may contact the following organisations for further guidance, clarification or advice about thermal insulation:

- **Energy Efficiency and Conservation Authority**[11]
- **New Zealand Green Building Council**[12]
- Several professionals can install insulation including providers from:
  - **Insulation Association of New Zealand (IAONZ)**[13]
  - **Community Energy Network (CEN)**[14]
- Use **this register**[15] to find licensed building practitioners in your area.
- Use the **electrical workers register**[16] to find an electrician.

11 **www.eeca.govt.nz**
12 **nzgbc.org.nz**
13 **iaonz.co.nz**
14 **communityenergy.org.nz**
15 **www.lbp.govt.nz/do-i-need-an-lbp/find-an-lbp/**
16 **kete.mbie.govt.nz/EW/EWPRSearch/**