Section 2: Problem definition and objectives

2.1 What is the context within which action is proposed?

Many New Zealand rental homes are cold and damp

A substantial amount of households (592,300) rent in New Zealand.[5] Many of the rental homes are cold and damp.[6,7] Insufficient insulation, inadequate heating, drainage and ventilation, moisture ingress and poor draught stopping all contribute to making rental homes cold and damp.[8] Research indicates that New Zealand's rental stock is consistently in worse condition on average than owner-occupied homes. Any new requirements for rental housing must be considered against other tenancy legislative changes and wider constraints in the housing market.

2.2 What regulatory system, or systems, are already in place?

The housing and tenancy regulatory system establishes the legislative settings for residential housing in New Zealand. It regulates the provision and use of social housing, retirement villages, rental housing and housing including developments where multiple owners hold a type of property ownership known as a unit title.

The system establishes:
(i) rights and obligations of residential tenants and landlords;
(ii) rules for ownership and management of unit title developments;
(iii) a framework for both public and private ownership of social housing;
(iv) rules to protect the interests of residents and intending residents of retirement villages and to enable the development of retirement villages.
Landlords, tenants and related parties may also need to meet requirements under other relevant legislation, including:

- the *Building Act 2004* and the Building Code for new rental homes
- the *Health and Safety at Work Act 2015*, the *Health Act 1956* and the *Housing Improvement Regulations 1947* (the HI Regulations).

During 2016/17, changes were made to the *Residential Tenancies Act 1986* (RTA) and its regulations to improve the quality of rental homes by making them safer, warmer, and healthier. This included requirements for there to be smoke alarms in all rental properties and insulation standards to be implemented by 1 July 2019. Stronger enforcement provisions were also provided for in the 2016/17 changes, enabling MBIE's Chief Executive to investigate and take direct actions against landlords who seriously or persistently breach the Act. The HHG Act and these standards provide a more comprehensive approach to achieving warm, dry rental homes.

Further changes to the RTA are being progressed alongside the healthy homes standards. They relate to tenant liability for damage to rental premises, methamphetamine testing and contamination in rental premises, and unlawful residential premises.

Current heating requirements for landlords in New Zealand

Currently, the *Housing Improvement Regulations 1947* requires every 'living room' shall be fitted with a fireplace and chimney or other approved form of heating.[9]

Current insulation requirements for landlords in New Zealand

Since 1 July 2016, social housing landlords have been required to meet ceiling and underfloor insulation requirements in their rental homes as set out in the 2016 Insulation and Smoke alarm regulations:[10] This requirement extends to private landlords on 1 July 2019.

Landlords need to include an insulation statement to disclose the extent of insulation in a rental home in new tenancy agreements.

Where insulation is being repaired or installed in rental homes, landlords must meet the current New Zealand Standard for insulation installation: NZS 4246:2016.

Landlords are prohibited from installing or repairing electrically conductive insulation (e.g. foil) in any ceiling or suspended floor in their rental home.[11]

There are exemptions to meeting the requirements of the 2016 regulations if:[12]

- it is not reasonably practicable to install insulation
- the home complies with the requirements relating to thermal insulation at the time it was installed and the landlord has the relevant record showing compliance with those requirements
- the landlord intends to demolish or substantially rebuild the home within 12 months and applied for any necessary resource consent or building consent before the tenancy commenced
- for 12 months from the date the tenancy commences, if the tenant is the former owner of the home.

Current ventilation requirements

The Building Code deals with ventilation requirements for new buildings under Clause G4, and internal moisture is specifically covered in Clause E3.

Regulation 9(1) of the HI Regulations requires that every bathroom shall have at least one window that directly opens to the external air unless other adequate means of ventilation are provided to the satisfaction of the local authority. Regulation 11 of the HI Regulations requires that each habitable room shall be constructed such that windows with an area not less than one twentieth part of the area of the floor of the room can be opened for the admission of air. Every room that is not a habitable room shall be provided with such window(s) as the local authority may consider necessary for adequate ventilation.

Current moisture ingress and drainage requirements

The HI Regulations include provisions to protect rental homes against moisture ingress and inefficient drainage.

Regulation 15 of the HI Regulations states that every house shall be free from dampness.[13]

Regulation 14 of the HI Regulations states that every house shall, to the extent the local authority deems necessary, be provided with efficient drainage for the removal of storm water, surface water and ground water. Every house shall be provided with gutters, downpipes and drains for the removal of roof water *to the* satisfaction of the local authority. It also provides that timber floors shall have adequate space and vents to ensure proper ventilation to protect the floor from damp and decay.

Current draught stopping requirements

Regulation 17 of the HI Regulations requires that the materials of which each house is constructed shall be sound, durable and where subject to the effects of the weather, weatherproof, and shall be maintained in such a condition. The walls and ceilings of every habitable room, bathroom, kitchen, kitchenette, hall and stairway shall be sheathed, plastered, rendered or otherwise treated and shall be maintained to the satisfaction of the local authority. Every floor shall be kept in a good state of repair free from crevices, holes and depressions.

2.3 What is the policy problem or opportunity?

A significant number of households rent in New Zealand (approximately 592,300). Many of the rental homes in New Zealand are cold and damp because of insufficient insulation, inadequate heating, drainage and ventilation, excess moisture and poor draught stopping.

Research from the Building Research Association of New Zealand (BRANZ), an independent research organisation, shows that New Zealand's rental housing stock is consistently in worse condition on average than owner-occupied houses.[14]

New Zealand rental homes could be of poor quality for a number of reasons:

- landlords might not invest in improvements or ongoing maintenance to the home because there can be little incentive to do so, as some types of improvements benefit tenants only, particularly in a tight rental market
- landlords may not be clear, or aware of, their (legal) obligations and therefore do not comply
- tenants may not be clear, or aware of, landlords' obligations so do not raise issues. Also tenants' short tenure and a tight rental market may mean tenants are reluctant to raise issues about the home in general, especially if they are on a low-income or otherwise in a vulnerable position.[15]

Living in cold and damp homes can affect wider social outcomes

Cold and damp homes are strongly associated with people experiencing health issues, including respiratory and cardiovascular conditions.[16] Cold homes with insufficient insulation and heating systems, especially in winter, are linked to poor health outcomes.[17] Damp and mouldy homes are associated with toxic reactions, allergies, pneumonia and asthma, and other infections.[18,19,20,21] Low income, elderly, children, disabled persons and Māori and Pacific people are more likely to live in or suffer from the effects of cold and damp homes. Homes with insufficient insulation, draughts and inefficient heating systems can also create higher atmospheric carbon emissions.[22,23]

The counterfactual is the situation where healthy home standards are not introduced. This would mean renters continue to experience cold, damp and under-insulated homes. The analysis in this RIS considers the changes from the status quo through different options across heating, insulation, ventilation, moisture ingress and drainage, and draught-stopping. This involves comparing the additional costs involved in complying with each standard with the additional benefits obtained through health costs avoided, energy savings, emission reductions and other potential (often qualitative) benefits. As there is a net benefit gain to New Zealand from introducing the standards, not introducing the standards means New Zealand forgoes this opportunity to make a gain.

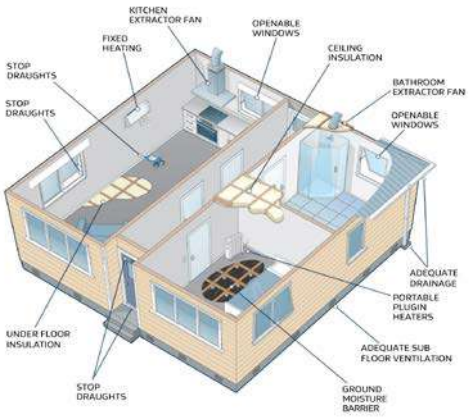
What would happen if healthy home standards are not developed

While there is a choice as to how extensive and comprehensive the healthy home standards are, the HHG Act requires that standards be introduced by 1 July 2019 to give effect to its objectives.

If no standards are developed or the standards reflect the status quo and do not require any improvement to the condition of the property, then some New Zealanders will continue to rent low quality houses that contribute to poor outcomes for themselves, their families and their communities. Overtime, the condition of existing low quality properties may continue to decline and very low quality rental homes would continue to exist unless (or until) they are declared uninhabitable or insanitary by a local government exercising its powers under the Building Act 2004.

Achieving a warm, dry home

Achieving a warm, dry home involves a house working as a system to manage ventilation, moisture and heat. This is shown in the following illustration:



To make a home is warm and dry, there needs to be the means to ensure there is adequate ventilation (to exchange moist or stale air with fresh air), drainage to take any moisture away from the home (as poor drainage creates conditions that make a home hard to keep warm and dry), stopping water getting into the house (e.g. though leaks), stopping draughts that can make it hard to keep the home warm, and for the home to have the means to be heated and insulation to prevent heat escaping.

Heating

Many New Zealand rental homes are cold in winter, leading to poor health outcomes

Many New Zealand rental homes are colder in winter than recommended indoor temperatures by World Health Organization guidance.[24] Data from a BRANZ study indicates that, during the winter months, mean living room temperatures in New Zealand fall below the recommended range.[25] Living room and bedroom mean temperatures are typically 15.8°C and 14.2°C respectively during the day and fall to 13.5°C and 12.6°C respectively overnight.

Cold homes are associated with poor health and other social outcomes.[26] A lack of adequate heating has been associated with higher rates of winter deaths, increased risk of cardiovascular disease and respiratory conditions. Heating can reduce illness by maintaining a healthy air temperature, lowering relative humidity and dampness, and reducing the risk of mould and fungi.[27]

22 percent of rental homes have no fixed heating, leading to inefficient or unhealthy heating being used

A large portion of New Zealand rental homes have no, inadequate, or inefficient heating available for tenants to use to reach a healthy indoor temperature.[28] The BRANZ 2015 House Condition Survey found that 22 percent of New Zealand rental homes have no fixed heating compared to 7 percent of owner occupied properties with no fixed heating.[29]

Tenants without fixed heating typically will rely on more costly to operate portable plug-in heaters and unflued gas heaters to warm a room.[30] The maximum heat output from portable electric heaters available in New Zealand is 2.4 kilowatts, which is typically not sufficient to achieve a healthy indoor temperature in larger living areas. Using multiple plug-in heaters in the same room is also not a practical solution because electrical circuits have limited capacity to power multiple plug in heaters.

Unflued gas heaters are a health and safety risk as they can produce toxic gases, such as nitrogen dioxide and carbon monoxide. Unflued gas heaters also produce water vapour that can make a room damp if it is not appropriately ventilated. The 2015 House Condition Survey found 21 percent of rental homes have unflued gas heaters and for 6 percent of rental homes this is their only source of heat.[31]

Insulation

In an average sized uninsulated home, about 30-35 percent of heat loss is through the ceiling and roof, and about 12-14 percent is lost through the floor

Many rental homes still do not have adequate insulation to retain heat and therefore are more likely to be cold, damp and mouldy.[32] Cold, damp and mouldy houses can create poor health and other negative social and environmental outcomes, such as increased carbon emissions, air pollution and higher energy costs associated with heating uninsulated homes.

Ceiling and underfloor insulation can be fairly easily retrofitted because many rental homes have accessible roof and/or subfloor spaces. In contrast, retrofitting wall insulation and double-glazing is more costly and usually involves substantial building work (such as removing internal wall linings) that, in addition to the costs associated with the work involved with compliance, could be quite disruptive to tenants living in a rental home. For this reason, current insulation regulations and the options proposed for the insulation standard are limited to requirements for ceiling and underfloor insulation retrofitting.

The 2016 regulations require landlords to install or retrofit ceiling and underfloor insulation in rental homes with no or minimal insulation by 1 July 2019 unless an exception applies. Landlords also need to ensure the insulation is in reasonable condition to help protect against cold and damp rental homes.[33] The 2016 regulations are in place until 1 July 2019 when they will be replaced by the new standards or continue to be in force.

To be effective, insulation must be well installed and maintained otherwise it will not perform well.[34] Sub-optimal insulation includes insulation that does not fully cover the required space, has settled in a way that inhibits its performance, covers downlights in an unsafe manner, is damaged or mouldy, has gaps or holes or is infested.

Ventilation

Poor ventilation is associated with the growth of mould and mildew

Many New Zealand rental homes are currently poorly ventilated, leading to dampness and mould.[35] Mould can lead to poor health outcomes for tenants.[36,37]

The presence of dampness and mould is a particular problem in areas where high moisture events are caused by everyday activities, such as showering, cooking, and drying clothes. These activities generate moisture that remains inside a rental home if it is not well ventilated.[38,39] Air needs to flow in and out of a home so it stays fresh, dry and healthy. BRANZ recommends to regularly open windows and doors wide for 10 – 15 minutes and to use extract fans to provide sufficient ventilation after a high moisture event, such as showering or cooking.[40,41] Tenants may be unwilling to leave windows open due to the entry of cold air or security concerns.

A study by BRANZ shows New Zealand rental homes had visible mould at greater levels than owner-occupied homes in all areas of the home. Bathrooms were the most common rooms with mould, followed by the laundry and the kitchen.

BRANZ data supplied to MBIE suggests around 37 percent of rental homes in New Zealand do not have mechanical ventilation (e.g. fans to extract moisture) in the kitchen and 44 percent do not have mechanical ventilation in the bathroom. A further 17 percent of kitchens and 12 percent of bathrooms have mechanical ventilation that is not venting outside (either

just recirculating the air within the home or venting it into the roof cavity).[42] Bathrooms without mechanical extract fans or heating were twice as likely to have moderate or worse patches of mould compared to those with extractors or heating.[43] Kitchens without any mechanical ventilation were three times as likely to have visible mould compared to those with mechanical ventilation.[44]

Insufficient sub-floor ventilation is also a problem in New Zealand homes. This is discussed in the "Moisture ingress and drainage" section below.

Moisture ingress and drainage

Up to 40 litres of water can rise up from the ground below a 100 sqm home every day, even if the ground appears dry

Moisture entering a home from outside often contributes to damp and mould issues inside the home in addition to moisture created by everyday occupant activities like cooking and showering – see the Ventilation section 3.

A 2015 study by BRANZ found that mould was visible in over half of New Zealand rental homes.[45] Mould is a key indicator of overall indoor air quality and is potentially harmful to tenants' health.[46] A recent New Zealand study shows a strong association specifically between mould and childhood wheeze.[47]

BRANZ research also indicates that 76 percent of rental homes have a subfloor, 44 percent of rental homes with subfloors have insufficient ventilation, and 81 percent of rental homes with subfloors do not have a ground moisture barrier.

What causes moisture ingress and inadequate drainage in rental homes?

- **Subfloor[48] moisture entering the home:** this is a major issue in New Zealand rental homes, particularly if there is insufficient subfloor ventilation or no ground moisture barrier[49] under the home (about 76 percent of rental homes have a subfloor[50]). The moisture can cause damp and decay to the building (including roof spaces).[51,52,53] BRANZ research shows that the amount of moisture rising from the ground under a home can be substantial (40 litres of water per day under a 100 square metre home)[54] even if the soil appears dry.[55] Ground moisture barriers protect against moisture rising from the ground,[56] yet most rental homes with subfloors (81 percent) do not have a ground moisture barrier. An estimated 44 percent of rental homes with subfloors have insufficient subfloor ventilation.[57] Inadequate subfloor ventilation can be caused by blocked vents, plants and shrubs covering vents, clutter in the subfloor that reduces airflow and too few vents in the subfloor walls.

- **Leaks:** Rainwater can leak into the home through gaps or holes in a home's roof, walls or windows. Plumbing leaks[58] in or under a home can lead to dampness in the home, building damage and can also worsen subfloor moisture and drainage issues.

- **Inefficient drainage:** Moisture can enter into the home if there are broken, blocked, or inadequate gutters, downpipes and drains. Paths and gardens that direct water into subfloor spaces can be significant sources of subfloor moisture that can then evaporate into the home, causing dampness.

- **No or failed waterproofing or drainage of concrete floors and in-ground walls:** If a home lacks a moisture barrier under a concrete floor, has no or failed waterproofing of basement in-ground walls or has inadequate drainage around a concrete floor or basement in-ground walls then moisture can enter into the home causing dampness.[59]

Draught stopping

Uncontrolled draughts let heat escape and let cold air in

New Zealand rental homes can be draughty, particularly if they were built before 1960 when houses were constructed in a less airtight manner than contemporary homes.[60] Draughts or uncontrolled air flows increase the risk of a cold indoor temperature.

Research from the Department of Public Health at the University of Otago, Wellington on new builds indicates even minor improvements in draught stopping can improve the warmth of homes.[61] The University of Otago's research shows minor draught stopping interventions, such as additional sealing strips and fitting draught excluders to exterior doors, can increase the indoor temperature by 1-1.5ºC.

Homes need to be well ventilated to keep the air inside fresh and dry. However, gaps or holes in a home can cause draughts and a cold interior. Smaller gaps may not appear problematic but can cumulatively cause a draught issue. Draughts also make it harder and more expensive for tenants to heat their homes.[62] Homes that are draughty can offset some of the benefits of improved insulation, heating, and ventilation.

2.4 Are there any constraints on the scope for decision making?

The Government's overarching objective is to establish minimum standards to allow New Zealand tenants to live in warm and dry rental homes. It has announced its intention to introduce standards, effective from 1 July 2019, to give effect to the HHG Act. The HHG Act and healthy homes standards work towards this objective by making rental homes warmer and drier.

2.5 What do stakeholders think?

Who are the stakeholders? What is the nature of their interest?

Considering the growing size of New Zealand's rental market, the correlation between rental housing quality and social and health outcomes, and the potential costs to investors, there was significant interest from a wide variety of stakeholders. In addition to Ministers and media, the identified stakeholders included:

- Landlord representatives: individual landlords, social housing providers, landlord advocacy and representative bodies, individual property managers, property management companies and representative bodies
- Tenancy representatives: individual tenants and tenancy advocacy groups
- Industry: tradespeople, retailers, product suppliers and representative bodies
- Social and health: District Health Boards, Primary Health Organisations, Plunket New Zealand
- Māori: Iwi/Rūnanga, Iwi primary health organisations, Iwi social housing providers and organisations Iwi advocacy representatives (such as Māori Women's Welfare League)
- Research: Otago University, Massey University, Building Research Association of New Zealand (BRANZ)
- Other peak bodies and supporting institutions: Federated Farmers, Student associations, Grey Power, Citizens Advice Bureau, budgeting advisors
- Government: local and regional councils, government agencies with housing stock (eg, LINZ, Corrections, Ministry of Education, NZDF), Ministry of Health, Housing New Zealand Corporation, Ministry of Social Development and Te Puni Kōkiri

What consultation has already taken place and with whom?

Following the passing of the HHG Act 2017, we engaged with building experts, industry suppliers and tradespeople and their peak bodies through a technical workshop to fully understand the key elements that would make the biggest, most tangible difference to the warmth and dryness of the home. Health researchers were commissioned to undertake specific pieces of work, and we met regularly with the Building Research Association of NZ and relevant government agencies. In addition, we participated in a Q&A forum at an Eco Design Advisor Conference. The information gathered from these engagements enabled us to develop the options that were released in a Discussion Document for public consultation. The Discussion Document was released on 4 September 2018, with consultation concluding on 22 October 2018.

To ensure the Discussion Document, which is technical in nature, could be understood by a variety of people, we created a shorter, simpler summary document. The public were able to provide their feedback in written form and through an online survey (using Survey Monkey). One submission was also conducted by phone due to the submitter's circumstances. We received 1,777 submissions, and all the stakeholders initially identified were well represented among the respondents.

Alongside the public consultation process, we held workshops in five centres across New Zealand (Whangārei, Auckland Central, South Auckland, Wellington and Christchurch), where invited stakeholders participated in a conversation on the proposed standards to help inform their written submissions. All stakeholder groups were represented at the workshops.

Which stakeholders share the Agency's view of the problem and its causes?

There is broad agreement shown through the consultation process that the problems and causes of damp, cold and mouldy homes are accurately captured and articulated in the discussion document, CBA and through well documented research. The proposed standards seek to balance the objective of creating warmer, drier, healthier rental homes within a timeframe where tenants can quickly notice the tangible improvements, against the impact on landlords, and the ability of landlords to make the necessary changes in a timely manner. The proposed standards are broadly supported by tenants, tenancy advocacy groups, health groups, and industry and product suppliers.

Which stakeholders do not share the Agency's view in this regard, and why?

There were differences in opinion among submitters on whether the proposed minimum standards go too far or not far enough. Landlords and their representative bodies have commented that some of the proposed standards could increase rents or push some landlords out of the rental market due to the costs of installing new equipment and ongoing maintenance, for marginal improvement to the quality of the specific rental home. There is also a widely held view from landlords and some tenancy advocacy groups that there needs to be better education for tenants on how to maintain the home to a healthy standard (such as proper ventilation). Some tenancy advocacy groups and health groups believe the standards do not go far enough in terms of prescribing a higher minimum standard (additionally suggesting landlords supply portable heaters, or a higher minimum indoor temperature, or the standards extending to other areas such as the provision of curtains), particularly given the lower socio-economic status of many tenants, and that rental properties are often of a lower quality than owner occupied homes.

Key Themes from Public Consultation

The largest proportion of submissions received were from tenants (44 percent), followed by landlords (38 percent). Submissions were also received from a range of stakeholders, including social housing providers, equipment suppliers and installers, public health experts, researchers, engineers, building inspectors, and home performance advisors. Some of the submitters were affiliated with Māori interests.

Broadly, tenants and health advocates were more likely to support higher standards, while landlords and property managers were more likely to support the status quo.

A number of ideas were raised during consultation that fall outside the proposed healthy homes standards, including the need for more tenant education, dryer ventilation, improving enforcement provisions, taking a whole-of-house approach, fuel poverty and affordability, the inclusion of curtains and a shower dome, and further exemptions. We have given these ideas consideration in our analysis, where possible. Some of these ideas could not be incorporated into these standards, as they were not feasible or appeared costly to implement. The information and guidance that is prepared to support the standard, particularly around tenant education, will be strengthened to support the implementation and overall understanding of the healthy homes standards.

Does the issue affect Māori in particular? Have iwi/hapū been consulted, and if not, should they be?

Māori families are more likely than other ethnic groups to live in, and feel the effects of, cold and damp rental homes. Cold and damp homes are strongly associated with people experiencing health issues, including respiratory and cardiovascular conditions, toxic reactions, allergies, and other infections. This leads to wider negative social outcomes, such as absent days from school or work. We sought specific feedback through the workshops and the consultation process from iwi housing providers, Rūnanga, Māori advocacy groups (such as social and health providers), and from Te Puni Kōkiri at an agency level. We received a good level of feedback from these groups.

If consultation is planned, how will this take place, with whom and when? If is not intended, why is this?

Consultation has taken place on the proposed standards, as detailed above.

Section 3: Options identification

3.1 What options are available to address the problem?

Criteria for options identification

The assessment criteria to determine the options considered:

- suitability: able to achieve the objective (warm, dry rental home); enduring, flexible and enabling adoption of future innovation and building solutions
- fairness: costs and benefits to landlords (time and money)
- equity: costs and benefits to tenants (time and money)
- feasibility: costs and benefits to industry (time and money)
- accountability: costs and benefits to government (clear and enforceable standards, court administration)

Heating

The heating options address the objective to provide warmer and drier rental properties by requiring landlords to take action to enable the property to meet minimum heating standards.

1.1 Rooms required to be heated

Option one – heating in the living room only

A landlord must provide a form of heating device in the main 'living room'. A living room could include a lounge, dining room and kitchen if it is an open plan rental home.

Option two – heating in the living room and in bedrooms

A landlord must provide a heating device in the main 'living room' (lounge and dining room and kitchen if open plan) and an appropriate heating device, if a heating device is required to meet indoor temperatures required by the standards, in any room that is rented as a bedroom.

Option three – status quo

A landlord is required to provide some form of heating in the living room (which may be an outlet plug and not necessarily a heating device).

1.2 Indoor temperature that heating devices should be sized for in a rental home

Option one – heaters must be capable of achieving an indoor temperature of at least 18°C

Landlords need to provide heaters capable of achieving an indoor temperature of at least 18°C in the room(s) applicable to the heating standard.

Option two - heaters must be capable of achieving an indoor temperature of at least 20°C

Landlords need to provide heaters capable of achieving an indoor temperature of at least 20°C in the room(s) applicable to the heating standard.

We propose to use a formula to determine the capacity required for heating devices for a room to achieve the appropriate indoor temperature. An online tool would assist with

calculating the capacity of the device needed.

Option three – status quo

No specification of type of heating or the temperature to which the device can heat the room.

1.3 Heating devices landlords should provide in rental homes

Option one – landlords provide fixed heating devices only

A landlord must only provide fixed heating devices where portable electric heaters are insufficient to achieve the appropriate indoor room temperature in the rooms covered by the heating standard. Where rooms covered by the heating standard can be sufficiently heated by portable electric heating devices, a landlord would not be required to provide any heating devices.

Option two – landlords provide both fixed and portable heating devices

A landlord must provide fixed and portable heating devices where necessary to achieve the appropriate indoor room temperature in the rooms covered by the heating standard.

Option three – status quo

No specification of heater type (may include an outlet plug, open fire or unflued gas heater).

Modified Option two

Landlords must provide fixed heating devices of a minimum capacity of no less than 1.5 kilowatts with a thermostat for electric heaters. This option ensures all living rooms have some form of fixed heating. It requires landlords to provide fixed heating in homes that tenants could heat with portable plug in electric heaters.

Insulation

The options set standards for properties to be insulated to a minimum standard to address the objective for rental homes to be warmer and drier.

2.1 Minimum levels of insulation required in rental homes

The proposed options for a minimum level of ceiling and underfloor insulation in rental homes for the insulation standard are covered in the following table.

Table 1: The proposed options for a minimum level of ceiling and underfloor insulation in rental homes for the insulation standard

Options	Ceiling requirements	Underfloor requirements
Option one (status quo continued)	**Insulation installed before 1 July 2016 must be replaced or 'topped up' if below**: • minimum R-value of 1.9, or 1.5 if in a building of high thermal mass construction	**Insulation installed before 1 July 2016 must be replaced or 'topped up' if below:** • 0.9
	Installed from 1 July 2016 + continue from 1 July 2019: • 2.9 if the home is located in zones 1 or 2 • 3.3 if located in zone 3	**Installed from 1 July 2016 + continue from 1 July 2019**: • 1.3

Option two (akin to "2001 Building Code")	**Existing insulation must be replaced or 'topped up' if below:** • 1.9 if the home is located in zones 1 or 2 • 2.5 if located in zone 3	**Existing insulation must be replaced or 'topped up' if below:** • 1.3
	All new insulation installed must be at least: • 2.9 if the home is located in zones 1 or 2 • 3.3 if located in zone 3	**All new insulation installed must be at least:** • 1.3
Option three (akin to "2008 Building Code")	**All existing and new insulation must be at least::** • 2.9 if the home is located in zones 1 or 2 • 3.3 if located in zone 3	**All existing and new insulation must be at least:** • 1.3

Option one (continue the status quo)

The requirements under the 2016 regulations (in Table 1) would continue to apply after 1 July 2019 so landlords must replace or retrofit insulation to meet (or exceed) the requirements for ceiling and underfloor insulation in their rental homes.

Option two

A landlord must replace or retrofit ceiling and underfloor insulation in their rental home if it is not in a reasonable condition (or better), and, when originally installed, did not have the R-value of (at least):

- ceiling: 1.9 if located in zones 1 or 2 and 2.5 if located in zone 3
- underfloor: 1.3.[63]

These R-values are the minimum level of ceiling and underfloor insulation for new homes built between the years 2001 and 2008. This option would require retrofitting or replacing ceiling and underfloor insulation if it did not meet the 2001 insulation standard when it was installed or if it is not in reasonable condition.

The 2001 Building Code insulation standard increased the R-value of floor insulation for all climate zones from 0.9 to 1.3 but, in practice, the methods and products for underfloor insulation did not change. Increasing the level to 1.3 would not require additional properties upgrade their underfloor insulation presuming the underfloor insulation is not damaged, complete and secure.

Where the insulation does not meet the requirements of this option, landlords must install or top-up insulation in accordance with the relevant New Zealand Standard to meet the following minimum R-values:

- ceiling: 2.9 if the premises are located in zones 1 or 2, or 3.3 if the premises are located in zone 3
- underfloor: 1.3.

Option three

Landlords must replace, retrofit or 'top up' ceiling and underfloor insulation if it is not in reasonable condition (or better), is not in accordance with the relevant New Zealand Standard[64] and, when originally installed, did not have the R-value (at least) of:

- ceiling: 2.9 if the premises are located in zones 1 or 2 or 3.3 if the premises are located in zone 3
- underfloor: 1.3.

These R-values are currently the minimum level of ceiling and underfloor insulation for new homes built since 2008 under the 2008 Building Code.

2.2 Assessing reasonable condition of insulation

Under the proposed options for insulating rental homes, existing ceiling and underfloor insulation must be in 'reasonable condition' and, when originally installed, have met certain minimum R-values.

Current Tenancy Service Guidance assesses existing ceiling insulation as meeting the 'reasonable condition' requirement if, for instance, ceiling insulation has not settled below 70 millimetres thick and has no mould, dampness or gaps.

Option one (status quo)

The following must be taken into account to determine whether any insulation is in a reasonable condition:

- the extent to which the performance of the insulation is compromised by any aspect of the insulation's condition
- the extent of any dampness, damage, degradation or displacement: ceiling insulation must not have excessively settled or compressed. Notably, for existing ceiling insulation, settlement or compression of up to 30% compared to the insulation's original thickness is deemed acceptable in guidance[65]
- the condition of any materials or other items that are ancillary to the installation of the insulation (e.g. strapping or staples)[66]

Option two

Insulation must meet the "reasonable condition" criteria described in option one above. However, for ceiling insulation, only a very minimal reduction in insulation thickness as a result of settlement or compression will be deemed acceptable in the assessment of reasonable condition.

2.3 Proposed Modified Option for Insulation

A modified option was identified following consultation on the options. The modified option combines the minimum level of insulation installed (Option three) and the reasonable condition (Option one and two), so that the standard for ceiling and underfloor insulation would be based on the 2008 Building Code OR, for ceiling insulation, a minimum thickness of insulation of 120mm.

Ventilation

The options identified for minimum standards for ventilation in rental homes address the objective for drier rental properties.

3.1 Ventilation requirements in rental homes

Option one (status quo)

Option one is the status quo. Under this option, a landlord must ensure:

- every bathroom has at least one window that directly opens to the outside air unless other adequate means of ventilation are provided *to the satisfaction of the local authority.*
- each habitable room must be constructed such that windows with an area amounting to not less than one twentieth part of the area of the floor of the room can be opened for the admission of air.

- every room which is not a habitable room shall be provided with such window or windows *as the local authority may consider necessary* for adequate ventilation.

Option two: openable windows and extract fans in rooms with a bath or shower

A landlord is required to install mechanical extract fans (or other similar device that extracts moisture) in indoor rooms that have a shower or bath, in addition to living rooms, dining rooms, kitchens and bedrooms having a window that can be opened for the entry of air. The extract fan must be properly sized for the room it is installed in, properly installed, located in close proximity to the moisture source, well ducted and vented to the outside of the house.

An exemption for certain rental homes could be provided in certain cases where it is not practicable to have an openable window in a room, including:

- if, at the time the home was built, it received building consent even though it did not have an openable window(s) in the relevant location
- if it is not reasonably practicable to create an openable window in the relevant location. Guidance will provide the detail of what is "not reasonably practicable".

Option three: openable windows and extract fans in rooms with a bath, shower or indoor cooktop

A landlord is required to install mechanical extract fans (or other similar device that extracts moisture) in indoor rooms that have a shower, bath or indoor cooktop to remove moisture vapour and cooking fumes, in addition to living rooms, dining rooms, kitchens and bedrooms having a window that can be opened for the entry of air. The extract fan must be properly sized for the room it is installed in, properly installed, located in close proximity to the moisture source, well ducted and vented to the outside of the house. The same exemption as for option two would apply.

Moisture ingress and drainage

4.1 Protecting rental homes against moisture entering the home and inadequate drainage

Option one (status quo)

A landlord is required to meet their existing legal obligations, including the Residential Tenancies Act and HI Regulations. That is, a landlord must maintain the premises in a reasonable state of repair including providing efficient drainage and storm-water removal from the property.

Option two: landlords install a ground moisture barrier if possible and drainage must be efficient

A landlord would be required to:

- provide efficient pipework or drainage without leaks to remove storm water, surface water, plumbing water and ground water to avoid water pooling around or under the home, and from water entering the home
- provide gutters, downpipes, and drains that are open and not blocked and can efficiently remove storm water, surface water, ground water and plumbing water and avoid pooling water around and under the house
- ensure a suspended floor has a ground moisture barrier that covers the soil under the home[67] to protect against moisture ingress and dampness.

This option targets the identified issue that many New Zealand rental homes have substantial subfloor moisture, insufficient subfloor ventilation, inefficient drainage and leaks and inadequate drainage.

To be exempt from the these requirements, a landlord would not need to provide a ground moisture barrier under option two if:

- the rental home is a pole house[68] with an open air space between the floor and the ground under the home; or
- a landlord obtains a certificate from a qualified building surveyor to show that their rental home complies with the standard.

Where a rental home has insufficient access to install a ground moisture barrier, the landlord will need to ensure that, wherever practicable, one of the exemptions above are met.

Modified Option two: landlords, wherever practicable ensure the subfloor, if enclosed, has a ground moisture barrier

A modified option was identified following consultation on the options. The modified option is a version of Option Two, updated to reflect the feedback received and further analysis, being that **landlords must ensure efficient drainage and guttering, downpipes and drains at their rental home, and wherever practicable ensure the subfloor, if enclosed, has a ground moisture barrier**, regardless of the presence of air vents. The rationale for this is provided below.

Overall, submitters were in favour of Option Two, and considered this option would better support drier, healthier homes. Those that preferred Option One (the majority of landlords and property managers) considered that current legislation was sufficient, and that the focus should be on enforcing current requirements rather than creating new ones. Some also noted that retrofitting older homes can be difficult and expensive.

Concern was raised during the public consultation period regarding the requirement for adequate subfloor ventilation in the form of vents where the instalment of these vents could compromise the structural walls. Concerns were also raised around the difficulty of establishing whether existing subfloor vents were adequately sized, which is difficult for a landlord or tenant to measure. Further discussion with BRANZ identified that ground moisture barriers were the most effective means of preventing moisture from entering the home, and vents made little material difference, as long as there was a ground moisture barrier installed.

Draught Stopping

The draught stopping options address the objective of achieving warmer and drier rental homes.

5.1 Draught stopping levels in rental homes

Option one (status quo)

Currently, regulation 17 of the HI Regulations requires that the materials of which each house is constructed shall be sound, durable and where subject to the effects of the weather, weatherproof, and shall be maintained in such a condition. The walls and ceilings of every habitable room, bathroom, kitchen, kitchenette, hall and stairway shall be sheathed, plastered, rendered or otherwise treated and shall be maintained to the satisfaction of the local authority. Every floor shall be kept in a good state of repair free from crevices, holes and depressions.[69]

Option two: stop unnecessary gaps or holes that cause noticeable draughts

A landlord is required to stop any unnecessary gaps or holes that cause noticeable draughts and a colder rental home, and block any decommissioned chimneys and fireplaces.

Date of Compliance with Standards

The date for compliance with the new standards was a substantial issue considered through the Discussion document.

The Objectives relevant to considering options for compliance dates

Our objectives for the timing to implement the standard need to take into consideration needs of tenants, landlords, industry, and government, so that:

- tenants see the benefits of a warmer, drier home as soon as possible
- landlords and property managers have sufficient time and support to understand and comply with the changes, and procure and install necessary requirements
- industry capacity is able to respond to the changes, particularly if impacted by other government initiatives such as KiwiBuild
- government has sufficient time to provide advice through information campaigns, develop necessary guidance, and expand enforcement capacity where necessary
- the timeframe does not restrict flexibility and innovation to meet a higher quality of rental home

Feedback was sought on three options:

- Option one: comply within 90 days at the start of a new or renewed tenancy with an end compliance date of 1 July 2024
- Option two: a single compliance date
- Option three: staggered compliance dates over five years, either by the standard or by the location of the rental home

Under all options a set compliance date was proposed for Housing New Zealand Corporation rental homes and Community Housing Providers.

The majority of individual tenant and landlord submissions supported Option three for implementation. Submissions by landlord and industry peak bodies supported Option one.

Based on consultation feedback on industry capacity, a start date of 2022 for option one was recommended by officials (Option one A). An alternative start compliance date for option one of 2021 has also been included in this analysis reflecting ministerial preferences (Option one B).

Officials note Option one A is more realistic to ensure a higher level of compliance with the standards. Industry providers would have more time to meet the increased demand, landlords would have more time to plan and finance compliance with their obligations, and Government would have more time to operationalise the regulations. Officials advise it would be difficult to ensure landlords are adequately informed and ready to comply with their new obligations earlier than 1 July 2022, in particular because the online tool to help implement the heating standard is unlikely to go live until October 2019.

Though officials are making best efforts to bring this date forward, it is important to make

sure the tool is enduring and fit for purpose in the long term. Officials also note landlords are a disparate hard to reach market with a significant portion of the market made up of small scale landlords, and adequate time is necessary to thoroughly inform landlords of their new obligations. Officials have also raised concerns an earlier date could disengage landlords who would otherwise comply with the standards.

Officials also prefer Option one A, because it recognises Government capacity and the many other housing initiatives which call on trades and industry capacity currently underway. These include: KiwiBuild, the Housing New Zealand retrofit programme, improvements to public housing supply, and s 9(2)(f)(iv)

Option one B will result in tenants benefiting from a warmer drier home at an earlier date and may mitigate industry bottlenecks by spreading compliance over a longer timeframe. An earlier compliance date may reduce behaviour where landlords leave compliance until the last minute. However, landlords with new tenancies shortly after 1 July 2022 may struggle to achieve compliance because of insufficient time to understand their new obligations. They will also have limited time to plan, finance and complete any required work.

3.2 What criteria, in addition to monetary costs and benefits, have been used to assess the likely impacts of the options under consideration?

Our overarching objective is to achieve warm and dry rental homes.

The Government has a responsibility to ensure people in New Zealand have access to adequate housing. New Zealand signed and ratified the International Covenant on Economic, Social and Cultural Rights that recognises the right of everyone to an adequate standard of living including, but not limited to, the right to adequate housing and 'the continuous improvement of living conditions'.[70] The HHG Act and healthy homes standards work towards this objective by ensuring rental homes are warm and dry.

We aim to close the gap in quality between rental homes and owner-occupier homes. Our goal is to develop specific standards for appropriate levels of heating, insulation, ventilation, moisture ingress, draught stopping and drainage to improve the quality of rental homes recognising the integrated nature of a home system.[71]

We anticipate raising the quality of rental homes will help to address the needs of identified at-risk groups: low-income, elderly, disabled persons, children and Māori and Pacific Peoples.

If rental housing quality is improved, other secondary benefits related to health, education and the environment may also result (e.g. reduced sick days off school and work, fewer hospital admissions for illnesses and reduced carbon emissions).

Criteria used to assess options for each of the healthy homes standards

Our proposed options for each standard have been assessed against the following criteria:

- able to achieve the objective (warm, dry rental homes)
- net costs and benefits (in present value terms in aggregate and per home)
- costs and benefits to government (developing guidance, clear and enforceable standards, dispute processes and court administration)
- enduring, flexible and enable adoption of future innovation and building solutions.

3.3 What other options have been ruled out of scope, or not considered, and why?

Safety is not included within the scope of the proposed insulation regulations. However, it must be noted that certain materials, such as foil insulation, can cause an electrical safety risk and should not be used. As it is metal-based, foil conducts electricity and will become live if the foil or fixing staples make contact with live wires. In the constricted space and low light of a typical subfloor, the risk of electrocution is high.