BUILDING PERFORMANCE

# Consultation document
# Building Code update 2022
# **Transition period for the energy efficiency of housing**

Amending Acceptable Solution H1/AS1 and Verification Method H1/VM1

30 May 2022

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Te Kāwanatanga o Aotearoa
New Zealand Government

Ministry of Business, Innovation and Employment (MBIE)

Hīkina Whakatutuki – Lifting to make successful

MBIE develops and delivers policy, services, advice and regulation to support economic growth and the prosperity and wellbeing of New Zealanders.

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# Contents

# Preface

The Building Code forms a key part of our building regulatory system in New Zealand. It sets the minimum performance requirements for the design of buildings. The Ministry of Business, Innovation and Employment (MBIE) is responsible for updating the Building Code and its documents so we can keep pace with innovation, current construction methods and the needs of contemporary New Zealand.

At MBIE, we aim for a balance between setting minimum performance requirements where necessary to ensure buildings are safe, healthy and durable, and encouraging higher standards of performance where this will impact positively on outcomes for the country.

The New Zealand Building Code is contained in regulation made under the Building Act 2004. The Building Code is performance-based, meaning that it prescribes only the level of performance that building work is required to achieve. The Building Code does not prescribe technical detail or standards to determine how the requisite level of performance must be achieved.

There are different ways to show that a building complies with the Building Code. One way that people may choose to comply is through the use of acceptable solutions or verification methods. These documents contain technical details, standards, calculation methods, and/or testing methods that are deemed to comply with the Building Code. Using these documents is one of the easiest ways to ensure a building meets the performance requirements set out in the Building Code.

If designers or builders want to comply with the Building Code performance requirements directly, they may also choose to use an alternative solution. An alternative solution is a flexible option that promotes innovation. An alternative solution can include a material, component or construction method that differs completely or partially from those given in the acceptable solutions and verification methods. They will usually require specific design and input from suitably qualified people, such as architects or engineers. Alternative solutions are not deemed to comply with the Building Code and must be assessed by Building Consent Authorities on their individual technical merits.

This consultation document is part of a series of proposals being consulted on for the Building Code acceptable solutions and verification methods in 2022. It has been prepared in response to emerging issues in the implementation of new insulation requirements in housing and follows on from previous consultations from 2021 on this topic.

Please take the time to let us know your thoughts. MBIE will carefully consider and weigh all submissions before making any decisions. You can provide feedback by following the instructions on MBIE's Have Your Say webpage.

Final decisions on the changes will be made and communicated later this year.

# Seeking feedback on the transition period for the energy efficiency of housing

In this consultation, we seek your feedback on the proposed change to the transition period for insulation requirements for the energy efficiency of housing.

## How to provide feedback

We invite you to submit feedback on the Building Code update by 5:00 pm on Monday, 13 June 2022.

- You can provide your feedback by completing a survey online via MBIE's Have Your Say webpage, or
- You can download a form at www.mbie.govt.nz and send it to us by email or post.
  - Email to: buildingfeedback@mbie.govt.nz, with subject line Building Code consultation 2022
  - Post to:

    Building System Performance
    Ministry of Business, Innovation and Employment
    PO Box 1473
    Wellington 6140

Your feedback will contribute to further development of the Building Code.

## Release of information

MBIE may publish copies or excerpts of submission to MBIE's website at www.mbie.govt.nz. MBIE will consider you have consented to publishing by making a submission, unless you clearly specify otherwise in your submission.

If your submission contains any information that is confidential or you otherwise wish us not to publish, please:

- indicate this at the start of your submission, with any confidential information clearly marked within the text
- provide a separate version excluding the relevant information for publication on our website.

Submissions will also become official information, which means it may be requested under the Official Information Act 1982 (OIA). The OIA specifies that information is to be made available upon request unless there are sufficient grounds for withholding it. If we receive a request, we cannot guarantee that feedback you provide us will not be made public. Any decision to withhold information requested under the OIA is reviewable by the Ombudsman. If you have any objection to the release of any information in the submission, and in particular, which parts you consider should be withheld, please set this out in your submission together with the reasons for withholding the information. MBIE will take such objections into account and will consult with submitters when responding to requests under the Official Information Act 1982.

## Private information

The Privacy Act 2020 establishes certain principles with respect to the collection, use and disclosure of information about individuals by various agencies, including MBIE. Any personal information you supply to MBIE in the course of making a submission will only be used for the purpose of assisting in the development of advice in relation to this consultation or for contacting you about your submission. We may also use personal information you supply in the course of making a submission for other reasons permitted under the Privacy Act 2020 (e.g. with your consent, for a directly related purpose, or where the law permits or requires it). Please clearly indicate in your submission if you do not wish your name, or any other personal information, to be included in any summary of submissions that MBIE may publish.

We will only retain personal information as long as it is required for the purposes for which the information may lawfully be used. Where any information provided (which may include personal information) constitutes public records, it will be retained to the extent required by the Public Records Act 2005. We may also be required to disclose information under the Official Information Act 1982, to a Parliamentary Select Committee or Parliament in response to a Parliamentary Question. You have rights of access to and correction of your personal information which can be found on the MBIE website at www.mbie.govt.nz.

# 1. Transition period for the energy efficiency of housing

We are proposing to extend the transition period for adopting new insulation requirements for housing in Acceptable Solution H1/AS1 and Verification Method H1/VM1. The proposed change would extend the transition period for 6 months to 1 May 2023. This proposed change considers feedback received in the 2021 consultation, changing circumstances in New Zealand's building and construction sector, and the importance of New Zealand's obligations under the Climate Change Response Act 2002.

## 1.1. Reasons for the change

In 2021, MBIE published updates to the acceptable solutions and verification methods for H1 Energy Efficiency to make new residential buildings warmer, drier and healthier. This update was made following a consultation that received more than 700 submissions totalling 3000 responses and more than 600 pages of feedback.

In that consultation, we heard changes for insulation requirements were long overdue as New Zealand lagged behind other countries. Buildings need to have adequate insulation in roofs, windows, walls and floors to keep people warm, dry and healthy and to make sure that energy is being used efficiently. Insulation can make it easier to heat a home in the winter and cool a home in the summer helping to reduce the amount of energy used in all parts of the country.

The final changes are based on the type of building (housing and small buildings versus other larger buildings[1]). For housing, these changes included:

- Doubling the amount of roof insulation required across the country.
- Increasing the minimum insulation level for windows across the country, with a focus on higher upgrades in colder climate zones and an additional performance improvement for warmer parts of the country in 2023.
- Improving underfloor insulation requirements and separating the insulation values for concrete floor slabs from other types of floors to allow further time for slab-on-ground construction practises to change.

Together, these changes can reduce the energy needed for heating residential homes by approximately 40% compared to previous minimum status quo requirements.

The new acceptable solutions and verification methods came into effect in November 2021. The previous edition of the documents can still be used for one year, until 2 November 2022, to provide a transition period to implement the new requirements. This means that designers and builders can choose whether to use the old or new versions of the documents during the transition period. At the end of the transition period, the previous edition can no longer be used.

The changes published in 2021 did not prescribe one way to comply versus another. For example, the new window insulation values could be met with solutions such as heat reflective glass with low-E coatings, uPVC frames, thermally broken window frames, or combinations of these.

In that consultation, we also heard about the challenges to implement the changes. This included changing the way building elements are designed and constructed and concerns about the availability of local New Zealand products to meet the demand for higher performing insulation. The feedback from this consultation was summarised as "go as far and fast as possible – without breaking anything in the system". We heard strong support that these changes could be implemented within the one-year transition period.

As part of MBIE's role as the building regulator, we actively monitor the implementation of new requirements and documents being published. Since November 2021, circumstances in the New Zealand building and

[1] These terms are defined within the acceptable solutions and verification methods for H1 Energy efficiency. Housing of any size (including multi-unit apartment buildings) has the same requirements.

construction sector have changed. In particular, there have been a number of concerns raised around the timeframe to implement the changes in insulation requirements for new housing. This included a letter sent on 11 April 2022 from the New Zealand Registered Master Builders Association, New Zealand Certified Builders, and OffsiteNZ to the Minister of Finance Hon Grant Robertson, the Minister of Housing Hon Megan Woods, and the Minister for Building and Construction Hon Poto Williams. This letter requested that the implementation of the new insulation requirements be extended by 12 months. The matter was subsequently referred to MBIE as decisions on acceptable solutions are the responsibility of the MBIE Chief Executive. This has prompted MBIE to reconsider the time period for implementing the 2021 energy efficiency update for housing.

## 1.2. Proposed change

It is proposed to extend the transition period for the new energy efficiency requirements for housing by 6 months. The new transition period would mean that the previous Acceptable Solution H1/AS1 and Verification Method H1/VM1 Fourth Edition Amendment 4 documents could be used to demonstrate compliance with the Building Code until 1 May 2023. As previously stated, the current Fifth Edition of Acceptable Solution H1/AS1 and Verification Method H1/VM1 can still be used today to provide higher levels of insulation to new homes. This proposed change would affect the document status of the new Fifth Editions of Acceptable Solution H1/AS1 and Verification Method H1/VM1 and these documents are proposed to be amended to come into force on 1 July 2022 with a new status. This proposed text for H1/AS1 and H1/VM1 is provided in Table 1.1.

There is no proposed change to the requirements for other buildings besides housing (either small or large buildings) as there is less concern around implementing the requirements for these types of buildings. There are also no proposed changes to the second step of glazing requirements for the warmer parts of the country in 2023.[2] An overview of the transition periods for the H1 acceptable solutions and verification methods is shown in Figure 1.1.

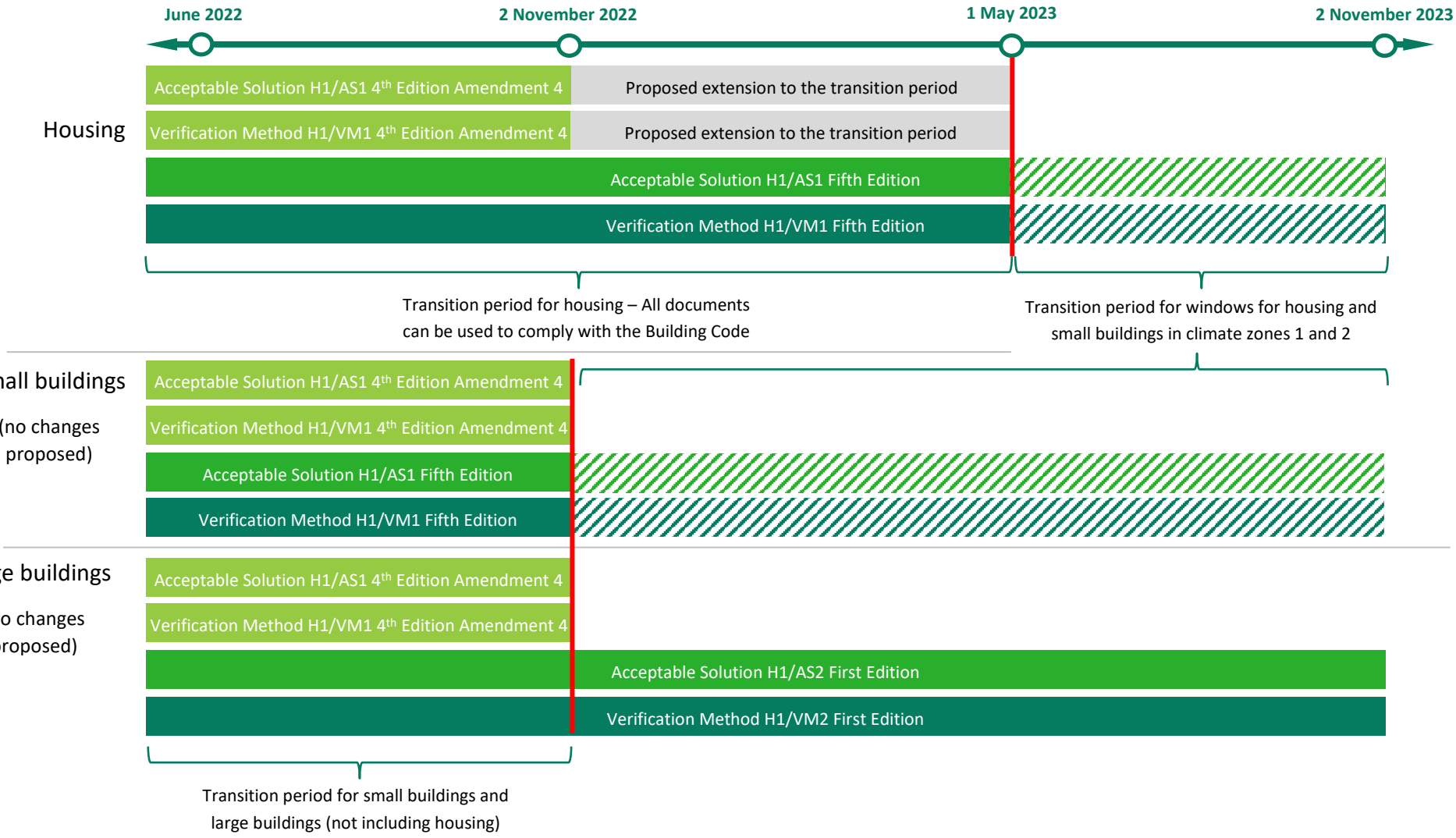
**TABLE 1.1: Proposed amended text for H1/AS1 and H1/VM1**

| Current text (red text to be removed) | Proposed text (blue text to be added) |
|---|---|
| Acceptable Solution H1/AS1 | |
| **Document status**<br>This document (H1/AS1) is an acceptable solution issued under section 22 (1) of the Building Act 2004 and is effective on 29 November 2021. It does not apply to building consent applications submitted before 29 November 2021. The previous Acceptable Solution H1/AS1 Fourth Edition Amendment 4, can be used to show compliance until 2 November 2022 and can be used for building consent applications submitted before 3 November 2022. | **Document status**<br>This document (H1/AS1) is an acceptable solution issued under section 22 (1) of the Building Act 2004 and is effective on 1 July 2022. It does not apply to building consent applications submitted before 1 July 2022. The previous Acceptable Solution H1/AS1 Fifth Edition (unamended) can be used to show compliance until 1 July 2022. The previous Acceptable Solution H1/AS1 Fourth Edition Amendment 4 can be used to show compliance until 2 November 2022 and can be used for building consent applications submitted before 3 November 2022. After 2 November 2022, the previous Acceptable Solution H1/AS1 Fourth Edition Amendment 4 can be used to show compliance for housing until 30 April 2023 and can be used for building consent applications submitted before 1 May 2023. |
| Verification Method H1/VM1 | |
| **Document status**<br>This document (H1/VM1) is a verification method issued under section 22 (1) of the Building Act 2004 and is effective on 29 November 2021. It does not apply to building consent applications submitted before 29 November 2021. The previous Verification Method H1/VM1, can be used to show compliance until 2 November 2022 and can be used for building consent applications submitted before 3 November 2022. | **Document status**<br>This document (H1/VM1) is a verification method issued under section 22 (1) of the Building Act 2004 and is effective on 1 July 2022. It does not apply to building consent applications submitted before 1 July 2022. The previous Verification Method H1/VM1 Fifth Edition (unamended) can be used to show compliance until 1 July 2022. The previous Verification Method H1/VM1 Fourth Edition Amendment 4 can be used to show compliance until 2 November 2022 and can be used for building consent applications submitted before 3 November 2022. After 2 November 2022, the previous Verification Method H1/VM1 Fourth Edition Amendment 4 can be used to show compliance for housing until 30 April 2023 and can be used for building consent applications submitted before 1 May 2023. |

[2] The transition periods for glazing are found in Paragraph 2.1.2.3 of H1/AS1 and Table 2.1.2.2B of H1/VM1. In November 2023, all parts of the country will require similar levels of insulation performance for glazing to demonstrate compliance.

# Transition period for the energy efficiency of housing

**Figure 1.1 Transition times for the insulation requirements for H1 Energy Efficiency acceptable solutions and verification methods**



## 1.3. Options

MBIE has considered the following options for the transition period:

**Option 1. Retaining the status quo with a transition period to end on 2 November 2022** – In the submissions from the 2021 consultation, this transition period was selected as the preferred option by 53% of the submissions.

**Option 2. Extending the transition period for 6 months to 1 May 2023 (Recommended)** – This option represents the average preferred option for the transition period from the submissions in the 2021 consultation[3].

**Option 3. Extending the transition period for 12 months to 1 November 2023** – In the submissions from the 2021 consultation, this transition period was selected as the preferred option by 37% of the submissions.

The recommended option to extend the transition period by 6 months was determined by balancing several factors. This option represents the best balance between the costs and benefits amongst the three options considered. It represents the shortest period of time in which the risks to the sector can be mitigated – thus achieving the desired outcome with the smallest environmental cost. The analysis of the options is discussed in the following section.

## 1.4. Analysis of the proposed change

### 1.4.1. Objectives of the proposal

The objective of the proposal is to provide a suitable transition period for the implementation of insulation requirements in new housing as a result of the 2021 Building Code update. This transition period needs to balance the need to reduce emissions and improve the quality of housing stock with other economic factors and supply chain issues.

### 1.4.2. Methodology

To assess the impacts of an extension to the transition period, MBIE conducted workshops with key organisations involved in building and construction to gain a broader set of perspectives on the transition period. This included representatives from designers, home builders, product supplier and manufacturing associations, researchers, and building consent authorities.

Through this engagement, there was no universal support for any of the options. The workshops revealed a broad spectrum of opinions from the different organisations. However, four major themes dominated the conversations:

1. Climate change and reducing emissions – Extending the transition period would be missing a critical opportunity to reinforce MBIE's commitment to decarbonising the building and construction sector and ensuring that New Zealand's building stock is warmer and drier than it has historically been.
2. Supply chains for products required to implement the H1 standards (insulation and windows) – There is already pressure in the building and construction sector due to record building consent volumes combined with Covid disruptions. The new insulation requirements will place an additional strain – leading to additional delays during the build process, in turn exacerbating cashflow problems for builders and driving more businesses into liquidation.
3. Readiness – The building and construction sector has been struggling since the 2021 lockdowns due to labour shortages and broader pressures, and their capacity to engage with new regulatory requirements has been at a historic low. Many participants felt that the building and construction sector in New Zealand was still not ready to implement the changes.
4. Economic impact – The additional cost of complying with H1 requirements would reduce the number of new build projects since consumers are facing cost of living increases. There is already a declining willingness to invest in new housing. This declining consumer interest has a negative impact on the building and construction sector, particularly in the context of other significant market headwinds such as increasing interest rates, labour shortages and the increasing cost of materials.

[3] In the 2021 consultation, 53% of submissions selected a 12 month transition period, 37% selected a 24 month transition period, and 9% selected 36 months or more. The weighted average of these preferences is approximately 18 months which corresponds to May 2023.

These different factors are discussed in more detail in the following sections.

### 1.4.3. Climate change and reducing emissions

As required by section 5Q of the Climate Change Response Act 2002, the New Zealand Government has committed to achieving a net-zero carbon target by 1 January 2050. On 16 May 2022, Government published the first three emissions budgets (2022-2025, 2026-2030, 2031-2035) and launched its first Emissions Reduction Plan (ERP). The ERP sets out policies and strategies for meeting emissions budgets, and includes actions for building and construction to support the government's overall goals.

Section 5ZN of the Climate Change Response Act 2002 states that in exercising a public power, a decision-maker may take into account:

- the 2050 target;
- emissions budgets;
- the emissions reduction plan.

The building and construction sector has an important part to play in New Zealand achieving the net-zero 2050 target. The MBIE Building for Climate Change programme aims to decarbonise the building and construction sector. This includes reductions to both the carbon embodied in new buildings (through the use of different designs, construction methods and materials) and the emissions generated by the operation of a building. Operational emissions are largely derived from the energy used to heat and cool a building and to heat water.

Among other recommendations, the ERP contains an action to implement amendments to Building Code clause H1 Energy Efficiency to improve the operational efficiency of buildings.[4] The 2021 amendments to the H1 Energy Efficiency acceptable solutions and verification methods are the first practical step as part of the transition to an operational efficiency methodology.[5]

More effective insulation in housing reduces the energy required to heat a building, and therefore reduces emissions required to generate that energy. The heating energy reductions resulting from the new required insulation levels vary between 30% and 50% depending on the type of housing and the location in the country. As such, implementing the new insulation requirements is one of the building sector's key actions in the Emissions Reduction Plan to lift buildings' energy efficiency.

Extending the transition period for housing delays the carbon savings that would be generated for some new homes. It is estimated that extending the transition period by 6 months could result in approximately 23,500 homes being built with a lower level of insulation, which would resulting in 203,000 tonnes of carbon dioxide equivalent ($CO_2$-e) being emitted over those buildings' 50 year lifespans. Extending the transition period to 12 months could result in approximately 46,000 homes being built to the lower level of insulation and 398,000 tonnes $CO_2$-e being emitted.[6]

MBIE has a strong commitment to playing its part in the Government's wider climate change work and obligations under section 5ZN of the Climate Change Response Act 2002. As a result, any extension to the implementation timeframe for housing must be as short as is practicable to reduce emissions and allow successful implementation of requirements being developed through the Building for Climate Change programme.

### 1.4.4. Performance of housing stock

As well as generating carbon savings, higher insulation settings in buildings improve health, comfort, and wellbeing of occupants. This was strongly echoed in the submissions on the consultation in 2021 from medical professionals and health advocates who stated that these changes were likely to achieve cost savings to the health system due to reduced hospital admissions and GP visits. Many New Zealanders suffer from respiratory illnesses such as asthma, and the quality of housing is a key consideration in mitigating the incidence and

[4] Refer to page 236 of Aotearoa New Zealand's First Emissions Reduction Plan.
[5] Refer to the Building and construction sector climate change response timeframe previously presented on page 8 of the Building Code update 2021 Outcome of consultation document available on building.govt.nz.
[6] The number of homes being built and consequential carbon emissions have been calculated based on future projections of building consents and the portions of new housing that could be built under different editions of the H1 Energy Efficiency acceptable solutions and verification methods.

severity of these health issues. As already discussed, the submissions in 2021 also agreed that New Zealand lags behind other countries with similar climates and that there was a strong desire for change. Over 98% of the responses received in 2021 preferred increases over the status quo.

Thus, the desire for change in new building stock has to be considered especially since the number of building consents for houses is at a rate that we have never before seen.

### 1.4.5. Supply chains

In the workshops, MBIE heard that:

- There is considerable work being undertaken by suppliers of key products to ensure they are ready to supply the market on 3 November 2022.
- Relevant industry associations have indicated that their members feel well-positioned to achieve the November 2022 target date.
- Other sector leaders with considerable on-the-ground experience had a lower level of confidence and suggest that gaps in the supply chain are inevitable. This is in particular where companies are importing products from overseas and thus reliant on global shipping and supply chains.
- Existing supply chain constraints in New Zealand are likely to be exacerbated by the new requirements for additional insulation and windows.
- Delays caused by supply chain constraints can have a major impact on timeliness of a project completion and thus on cashflow. Many building businesses lack financial resilience meaning that these issues can lead directly to business failure.

MBIE accepts that there is a real risk that in an environment where supply chains are already under extreme pressure, there may be additional delays in the event that the status quo remains.

There is also a risk that the suppliers who have already invested in preparation of the 2022 November transition date, will find themselves with products that go further than the regulatory minimum until the change is implemented. Those higher-performing products, however, can still be installed before the minimum standard rises and anecdotal evidence suggests there continues to be a market demand for insulation products that perform above the minimum requirements.

### 1.4.6. Readiness

When the changes to the insulation requirements were announced in November 2021, the changes were met with widespread support across the building and construction sector. Since that date, however, the sector has come under increasing pressure from:

- High consenting volumes coinciding with labour shortages;
- Disruption from Covid-19;
- Supply chain constraints; and
- Cost increases across the board.

During the workshops, builders, in particular, were unfamiliar with the new insulation requirements and had concerns as to how they will be required to implement the changes on-site. These concerns range from an uncertainty about how to deal with new imported products, how to apply new installation techniques, or how to manage risks from spending more time working at height in roof spaces.

MBIE accepts that many in the building and construction sector have been under real pressure in the past 6 months and may not have had the opportunity to engage with the new insulation requirements. MBIE's view, however, is that much of this uncertainty arises from a lack of understanding about the scale and scope of the new requirements. The changes to the insulation requirements were designed, very deliberately, as a first step of a much longer journey to transform the quality and carbon impact of our new houses. The update in 2021 does not involve disruptive design changes or require the use innovative or unfamiliar products. In the majority of cases, existing design methods and products can be used to achieve the necessary outcomes. In the case of windows, although the actual windows themselves will be technologically different, they are able to be installed in the same way as they are now.

Information already available on the changes to the insulation requirements includes:

- MBIE's outcome of consultation document that highlights what feedback we received during consultation in 2021 and what changes were made to the minimum insulation settings. This is available on building.govt.nz.
- MBIE's webinar from December 2021 that includes discussion with technical experts about these changes. A recording of this webinar is available to view online.
- BRANZ bulletins
  - BU660 Residential walls with high thermal performance
  - BU661 Residential roofs with high thermal performance
  - BU668 Complying with H1 - Housing and buildings up to 300 metres squared
  - BU670 Specifying windows and doors under H1
- Articles about the changes to the insulation settings from other organisations including:
  - Insulation association of NZ
  - EBOSS
  - New Zealand Master Builders Association
  - BOINZ Straightup Magazine
  - Passive House Institute NZ (PHINZ)
- Webinars and presentations prepared by BRANZ, the New Zealand Green Building Council, and others
- Various product brochures and information available on websites for insulation and window manufacturers and suppliers in New Zealand.

Nevertheless, the pending changes are causing stress and uncertainty amongst those who are going to be required to deliver the changes on-site. There is a concern that the mental health of those in the building and construction sector, which already has a long history of poor mental health outcomes, will suffer further.

In order to implement the changes successfully, we need a building workforce that is familiar with the requirements and confidently able to build to the new design requirements. MBIE has been told, loudly and clearly, that the ability of the sector to develop sufficient knowledge and confidence before November 2022 is limited. Many small businesses (who comprise the vast majority of the building sector) continue to operate under high workloads and high stress and their current capacity to engage with the new regulatory requirements is very low.

### 1.4.7. Economic impact

The new insulation requirements were previously determined to cost between $9,000 to $15,000 for new housing versus the minimum requirements previously in place. This cost can vary depending on the size of the house and the location in the country. Balanced against these up-front investment costs, however, will be a reduction in the energy it takes to heat the house, and the associated cost savings. The reduction on energy required to heat a home is approximately 40% on average but can be as high as 50% in the coldest parts of the country.

It is difficult to predict the impact that the additional costs will have with a high degree of confidence. However, when speaking with organisations in the building and construction sector, MBIE heard that:

- Consumers are already under financial pressure in light of cost of living increases and are already put off by long delays, supply chain uncertainties, and cost fluctuations.
- Additional upfront costs are likely to further disincentivise consumers from choosing to build a new home. Choosing not to build can result in a further and faster downturn of the sector.
- Many consumers are already choosing to pay additional costs in order to have a warm, dry and healthy home that takes less energy to heat. One volume builder has informed MBIE that about 50% of their customers are already choosing to build to the higher levels of insulation. For others, it may indeed prove to be a disincentive.

There is also no way of predicting with any confidence whether a 12 month extension would increase or decrease consumers' confidence and their willingness to invest. There is also no basis on which to determine

whether the economic impact arising from cost increases, after an extension of 6 or 12 months, would be materially different to the impact of proceeding in November 2022. As the economic impact is unclear, it is not the sole consideration for these options. What is clear is that the new insulation requirements should be implemented as soon as is practicable and that the changes cannot be delayed indefinitely.

### 1.4.8. Summary of the analysis for different transition periods

#### 1.4.8.1. Option 1. Retaining the status quo with a transition period to end on 2 November 2022.

The impacts of implementing the status quo option of a November 2022 transition period include:

- Realising benefits for reduced energy use and reduced carbon emissions from new houses in a shorter time period. Careful consideration has been given to the government's 2050 net-zero carbon target and the commitments made in the Emissions Reduction Plan regarding the building and construction sector's contribution to emissions budgets. Delaying the implementation of the insulation requirements changes does not ultimately undermine the ambition in the Government's Emissions Reduction Plan. However, these changes are key first step and must be delivered successfully to realise those benefits.
- Realising other benefits associated with increase insulation to provide warmer, dryer, and healthier homes in a shorter time period. While there is an evidence-based connection between better housing and better health outcomes, the nature and extent of the impact of these specific changes is difficult to quantify.
- The additional stress and pressure on the sector to deliver on the changes by November 2022, in conjunction with potential cashflow problems, may have further negative impacts on the mental health of some building and construction sector participants.
- The cost associated with insulation requirements that cannot be delivered by many will put additional pressure on those people. This will likely result in lower productivity, increase consent processing time, and potentially drive some players out of the market.
- Other costs – financial and social – arising from proceeding with the status quo. The additional pressure on the supply chain is likely to cause additional delays in construction timeframes and exacerbate cashflow problems as payments are often linked to milestones and completion. Given the financial pressure the sector is experiencing, this impact could lead to an increase in company liquidations, particularly at the smaller end of the market.
- The risks that additional stress, supply chain delays and the lack of readiness within the sector may all combine to undermine successful implementation of the changes. Of more concern, this may also increase the downward pressure on the sector and those in it. With few exceptions, those in the building and construction sector fully support the changes to increase insulation settings and also the overall direction of travel of the building system in becoming more sustainable, generating less carbon and delivering a better product. What MBIE has been told, however, is that they cannot do it right now. In pragmatic terms, this suggests that an extension is not only justifiable, but required.

After acknowledging the importance and weight of the benefits, the costs of retaining the status quo transition period outweigh the benefits and maintaining the status quo is not recommended. However, in order to ensure that the costs of delaying climate change targets do not outweigh other considerations, it is important to ensure that any extension is as short, and with as narrow a scope, as possible.

#### 1.4.8.2. Option 2. Extending the transition period for 6 months to 1 May 2023 (Recommended)

The impacts of providing a 6 month transition period to the implementation of insulation requirements in housing include:

- Reduced risk of supply chain issues for improved insulation and glazing products: An additional time period will enable the sector to better address potential supply chain constraints for products needed for meeting the new insulation requirements. While we know that many suppliers are working hard to prepare for the changes, we have also been told that an additional period of time will be beneficial to guarantee a smoother and stable supply of key products.
- More time for training and education: This would help the people better understand the new insulation requirements and likely reduce risks of delays for obtaining building consent.

- Reduced risk of disruptions from additional cost: While there remains uncertainty about the impact that the additional costs of building will have, once there is greater confidence in the stability and reliability of key supply chains, this will likely increase consumer confidence in the ability of the sector to deliver. This may reduce the risk of delays and the financial pressure arising from those delays.
- Reduced stress for building practitioners: The construction sector faces considerable challenges in the current environment of impacts from COVID-19 and supply shortages. There is genuine concern that adding additional change without comprehensive education could be seriously detrimental to the mental health of the sector practitioners. Extending the implementation timeframe may reduce these impacts.
- Reduced upfront cost for home-buyers: The new insulation requirements are expected to require an additional upfront investment for better insulation and glazing. Extending the implementation time frame would mean that buyers of the approximately 23,500 homes that are expected to be constructed in the 6 months of delay would avoid this upfront cost, if they choose to remain with current standards rather than the new ones. We note that this could mean greater whole-of-life costs in terms of energy usage.
- Missed emissions reduction opportunities: Delaying implementation of the new requirements would mean emissions reduction would not be realised for the homes constructed to the previous insulation requirements. This means that even steeper emissions reduction and potentially more disruptive measures for the industry would be needed in the future to achieve the building and construction sector's contribution to New Zealand's emissions reduction targets.
- Health and wellbeing benefits for occupants not realised: The new insulation settings better support achieving warmer, drier and healthier homes, and improved wellbeing outcomes for building occupants. Extending the transition period would mean that more homes are likely to be provided with a lower level of thermal comfort for occupants or occupants will have to pay higher energy costs to heat their homes for the life of these homes.
- Negative financial impacts on product suppliers: In anticipation of the demand induced by the new insulation settings, suppliers of insulation and window products have already undertaken actions to implement the changes needed to meet the increased insulation requirements. Extending the transition period means that it will take longer until these suppliers will be able to fully redeem their investments. Some suppliers may face additional financial impacts where a product has a limited shelf-life, such as Low E glass, and needs to be written-off by suppliers as a result of a delay.

MBIE considers this option to provide the best balance between costs and benefits. It represents the shortest period in which the sector will reasonably be able to ready itself to deliver on the changes, and it will allow resilience to develop in domestic supply chains.

To make a May 2023 implementation date successful, MBIE will need to continue to monitor the implementation of the change and ensure there is satisfactory education opportunities and information about the upcoming changes for all parts of the building and construction sector.

1.4.8.3. Option 3. Extending the transition period for 12 months to 1 November 2023.

A 12 month extension to the transition period has similar impacts to a 6 month extension. This would allow for more than enough time for people to become familiar with the changes and learn how to deliver them. It is also more like that the concerns around the supply chain would have been mitigated through the increase in domestic production of key products or increased imports as congestion in international supply chains eases.

However, a key cost associated with a 12 month extension is an environmental one. Delaying the implementation of the new insulation settings will result in even more homes constructed to the lower insulation levels, where people choose to use the previous insulation requirements to comply. This will result in even more carbon emissions through the life of the building than would otherwise be required for the new insulation levels. To add to this, the health benefits that would accrue from improving the quality of new housing stock would not be realised and could extend over the life of the building.

In consideration of these factors, MBIE considers that the cost of a 12 month extension in environmental and health and wellbeing terms outweighs the benefits of delaying for that period of time. Most of those same benefits can be achieved with the short 6 month extension and a 12 month extension is not necessary to implement the new insulation settings for housing.

## 1.5. Questions for the consultation

1-1 Do you agree with the proposed extension of 6 months to the transition time so that the previous lower insulation settings can be used until 1 May 2023?

1-2 What impacts would you expect for you or your business from the proposed change to the transition period?
These impacts may be economic/financial, environmental, health and wellbeing, or other areas.

1-3 What support would you or your business need to implement the changes by 1 May 2023 if introduced?

- Information about what the insulation changes are or what buildings they apply to.
- Education material on how the new documents can be used to comply with the Building Code.
- Webinars from MBIE technical experts.
- Other types of support.