BUILDING PERFORMANCE

# Consultation document

## Building Code operating protocols

Referencing standards and a tier framework to support standards in the Building Code system

6 APRIL 2021

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

New Zealand Government

# Foreword from the Manager Building Performance and Engineering

The New Zealand Building Code (and its associated documents), along with the Building Act 2004, are the primary legislation governing building work in New Zealand. In our role as the building and construction regulator, the Ministry of Business, Innovation and Employment (MBIE) is committed to updating the Building Code and its documents so it can keep pace with innovation, current construction methods and the needs of our modern society.

This document introduces the first two of a series of "operating protocols" that MBIE is developing to provide increased transparency and certainty about the activities it undertakes as stewards of the Building Code. The intent of these protocols is to eventually replace the Building Code Handbook.

Each protocol will provide information about an aspect of Building Code-related work, and rules and/or principles that will help guide that work.

MBIE will publically consult on each protocol while it is being developed. Finalised protocols will be reviewed periodically and published on www.building.govt.nz.

The protocols that we're consulting on in this document relate to standards. Building and construction standards are often referenced in the acceptable solutions and verification methods that MBIE publishes to support compliance with the Building Code.

In recognition of this, MBIE, as the building and construction regulator, contributes to the standards development process. However, given there are around 350 standards referenced in the Building Code system, decisions need to be made about how to maintain them.

Our ideal future state is one where the building and construction regulator, the building and construction sector, and Standards New Zealand all work together to make sure standards continue to be maintained. These protocols are the first step down that path.

The protocols propose which standards the regulator will be focussing resources on supporting, as well as guidance on what needs to be included in a standard in order to have it referenced in an acceptable solution or verification method.

You'll see that we have identified around forty standards that in our view the regulator's efforts are best placed in supporting. Outside of this list, the regulator will be looking to the sector to take the lead in maintaining them, in conjunction with Standards NZ

We acknowledge that this is a big change, and it may cause some concern in the sector. However, I can assure you that the long term gains of a more co-ordinated and efficient update process will far outweigh the temporary adjustments that will need to be made.

There is precedent for standards being managed in this way. Other sectors do it successfully, and even in the building and construction sector, there are examples of this being effectively done.

Please take the time to let us know your thoughts. You can provide feedback by following the instructions on MBIE's Have Your Say webpage.

**Dave Robson**
*Manager, Building Performance and Engineering*

# Contents

**Seeking feedback** **04**

**How to provide feedback** **04**

**Context** **05**

Standards in the Building Code system . . . . . 05

**Building Code Operating Protocol – Referencing standards in the Building Code system** **06**

Why do we use standards in the Building Code system?. . . . . 06

How do we use standards in the Building Code system?. . . . . 06

What criteria must be met to reference a standard? . . . . . 07

**Building Code Operating Protocol – Tier framework to support standards in the Building Code system** **10**

Why do we have a tier framework for standards? . . . . . .10

How do we use the tier framework for standards?. . . . . .10

What does the tier status mean for standards in the Building Code?. . . . . .12

**Appendix A Standards tier status assessment** **13**

# Seeking feedback

In this consultation, we seek your feedback on both draft operating protocols:

› Referencing standards in the Building Code system
› Tier framework to support standards in the Building Code system

MBIE is asking the following questions on the operating protocols:

1. Do you agree with the proposed criteria for referencing a standard in the Building Code system?
2. Do you agree with the proposed criteria for deciding the tier status of standards (level of risk, contribution to the Building Code and design focus)?
3. Which standard(s) and their proposed tier status particularly impact you and why?
4. Is there anything else you would like to tell us about these protocols for the use of standards in the Building Code system?

# How to provide feedback

We invite you to submit feedback on the operating protocols by 5pm, Friday 28 May 2021.

› You can provide your feedback by completing a survey online
› Or, you can download a form at www.mbie.govt.nz and send your submission by email or post.
  – **email to**: buildingfeedback@mbie.govt.nz, with subject line *Building Code consultation 2021*
  – **post to:** Ministry of Business, Innovation and Employment, 15 Stout Street, Wellington 6011
  – **or:** Ministry of Business, Innovation and Employment, PO Box 1473, Wellington 6140

Your feedback will contribute to further development of these operating protocol documents.

It 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.

# Context

## Standards in the Building Code system

The two draft operating protocols in this document relate to standards.

Standards are approved specifications (e.g. for products, processes or performance), developed by expert committees using a consensus-based process. This type of process has been used in both New Zealand and internationally for decades to inform a number of aspects of building design. Standards New Zealand is a business unit within MBIE responsible for managing the development of, and providing access to standards in New Zealand.

In our separate role as the central regulator for building work, MBIE draws on standards alongside other sources of information to develop materials that support the Building Code, and can incorporate a standard directly into an acceptable solution or verification method by reference.[1]

There are approximately 350 standards referenced in acceptable solutions and verification methods currently. Of these, approximately 25% are New Zealand standards, 25% are joint New Zealand/Australian standards, and the remaining 50% are other international standards.

Ensuring that the set of standards that are referenced in the Building Code system remain fit-for-purpose is a significant programme of work, and ranges from staying up-to-date with international standards, through to MBIE, as the building and construction regulator, being directly involved in development of New Zealand standards.

The purposes of developing the attached operating protocols are listed below.

| Document | Operating Protocol – Referencing standards in the Building Code system | Operating Protocol – Tier framework to support standards in the Building Code system |
|---|---|---|
| **Purpose** | To provide a list of qualities that should be common to standards referenced in the Building Code to:<br>› support decisions to reference standards; and<br>› be taken into account in the development of New Zealand standards. | To guide decisions about where the building and construction regulator's resources will be targeted, to support planning and programming of development of New Zealand standards. |

1 There are also two standards referenced in the Building Code and one standard referenced in the Building Act.

# Building Code Operating Protocol – Referencing standards in the Building Code system

**Application of the protocol:** This document outlines the approach used to guide decisions about the referencing of standards, developed within New Zealand and internationally, within the Building Code acceptable solutions and verification methods.

**When to use the Protocol:** This document is intended to be taken into account in both the development of acceptable solutions and verification methods, and in the development of standards intended to be used for the Building Code. The principles of the protocol would also apply to other types of information being considered for incorporation into acceptable solutions and verification methods.

## Why do we use standards in the Building Code system?

A standard is a technical document designed to be used as a rule, guideline or definition. It is a consensus-built, repeatable way of doing something. Provisions for the development of standards in New Zealand are set out in the Standards and Accreditation Act 2015.

Standards are created by bringing together all interested parties such as manufacturers, consumers and regulators of a particular material, product, process or service. All parties benefit from standardisation through increased product safety and quality as well as lower transaction costs and prices.

The standards process has been used both in New Zealand and internationally for decades, predating the current Building Code system. Standards are used to inform a number of aspects of building design, and utilises expert knowledge to consider how to ensure safety and quality in building performance.

## How do we use standards in the Building Code system?

Standards are one of the sources of information that MBIE draws from when developing acceptable solutions and verification methods (documents that detail a pathway to comply with performance criteria in the Building Code, see Figure 1).

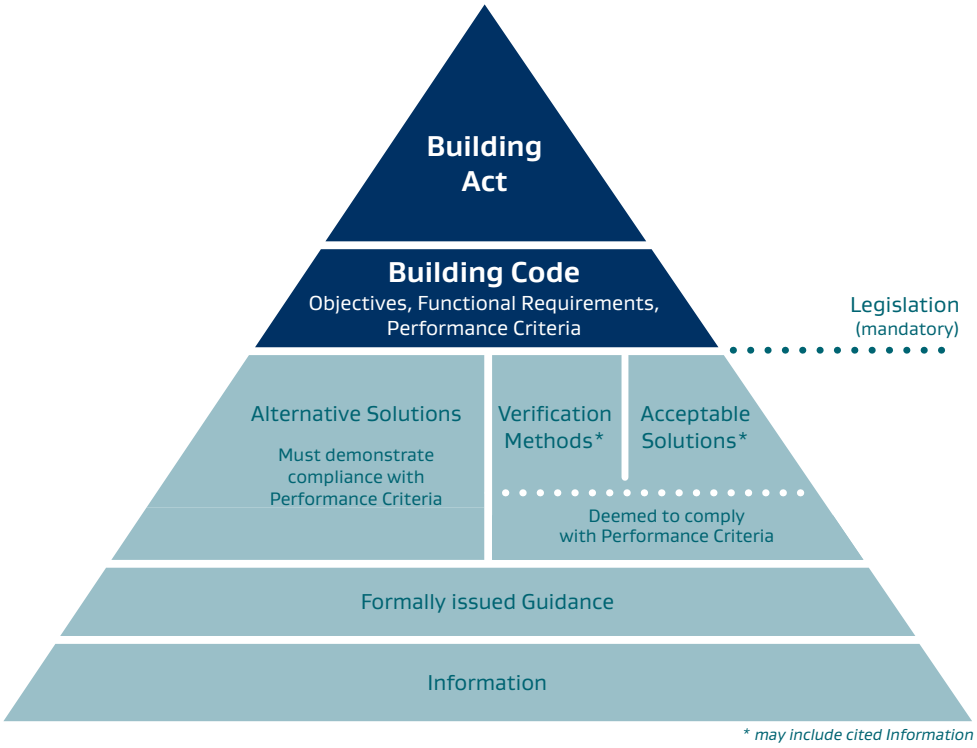
Section 405 of the Building Act 2004 recognises that standards may be used for this purpose, and enables a standard to be incorporated into acceptable solutions and verification methods by reference. Referencing a standard avoids the reproduction of detailed technical information within the document itself.

Standards may also be referenced in non-mandatory materials that seek to provide examples of good practice or in alternative solutions for complying with the Building Code, developed by the sector.

An acceptable solution and verification method must make reference to the specific version of any referenced standards, and it is this version that has legal effect. If a standard is updated, the reference needs to be amended in the acceptable solution or verification method for the updated version to take legal effect. This process also requires public consultation, in accordance with Section 409 of the Building Act 2004.

When a standard that is referenced in an acceptable solution or verification method contains references to other standards, these are commonly referred to as “secondary references” in the Building Code system. Management of these secondary references, including how to change their citation when they are updated, also needs to be considered. By default, the version of the secondary reference that was current at the time the primary reference was updated shall be used.

**FIGURE 1:** Schematic of the Building Code system




## What criteria must be met to reference a standard?

The Building Act 2004 section 25(2) specifies that:

An acceptable solution or a verification method must not contain a provision that—

(a) relates to contractual or commercial requirements; or

(b) relates to regulatory approvals, dispensations, or waivers; or

(c) is inconsistent with the Act or regulations.

In our role as the building and construction regulator, MBIE considers that by extension, these requirements apply to the content of any standard that is incorporated into an acceptable solution or verification method. Therefore standards referenced in acceptable solutions and verification methods should also meet these tests. Alternatively, the content of the standard to be incorporated can be modified by specifying the replacement or removal of particular sections with the citation. However, this can be confusing and should be avoided where possible.

In addition to the Act requirements listed above, when deciding to incorporate a new or updated standard by reference in an acceptable solution or verification method, the degree to which the following criteria have been met will be considered:

› **Alignment to the Building Code**

- Technical content shall align with the Building Code's Objectives, and not duplicate or contradict them.
- Technical content shall not extend to key risk settings or requirements that involve a subjective decision on the minimum level of building performance. Balancing the societal cost of risks and consequences associated with minimum levels of building performance is to be done in the Building Code itself, either in regulation or the acceptable solutions or verification methods, and not documents referenced within them.
- Adherence to the standard shall result in meeting the performance requirements of the Building Code clause to which it will be referenced.

  - Technical content refers to methods appropriate for the type of compliance pathway (acceptable solution or verification method) and be written to match the level of professional expertise of the intended readership. All content is written in plain English.
  - Technical content uses the same definitions and terms as those used in the Building Code, and is consistent with those used in other related standards and documentation.

- **In scope** Content that goes beyond scope of the Building Code will be stated explicitly in the standard and organised into a separate part, such as an informative appendix, or excluded from the citation.
- **Clear** The standard differentiates clearly between the mandatory (normative) content, which must be met in order to comply with the Building Code, and other explanatory or advisory (informative) content. “Shall” and “Must” are used for normative content requirements, “May” is used for situations permitted in the normative content. “Should” is used only for informative content statements. Standards shall not require compliance with any Building Code clause, acceptable solution or verification method (to avoid circular references).
- **Specific** Content contains complete and unambiguous statements that clearly specify what is necessary to comply with the requirements, and provide no opportunity for departure from these. Requirements are expressed in precise and quantifiable terms wherever feasible.
- **Implementable in New Zealand** The standard is able to be complied with in New Zealand.
- **Available** The standard is publicly available at the time of reference in the Building Code system.

These criteria apply to New Zealand and international standards, including those developed jointly by Standards New Zealand and other international standards bodies. It is recognised that for standards developed internationally, with no input from New Zealand, there is little opportunity to ensure the content meets all these criteria. Nevertheless, to be referenced within the Building Code system, they should comply with the above to the extent that is practicable.

Examples of statements that do not meet some of these criteria, and therefore should not be included in standards intended to be referenced in the Building Code are listed in Table 1.

Standards New Zealand provide further general information in their booklet “How are standards used in policy and legislation”.

**TABLE 1: Examples of statements not meeting the regulator's requirements for standards**

| Examples of statements that do not meet criteria for referencing | Explanation |
|---|---|
| The work shall comply with the requirements set out in B1/AS1. | Duplicates and could contradict Building Code requirements, also if this standard is to be referenced in B1/AS1, this creates a circular reference. |
| This level of performance is adequate to protect building users from the risk of xxx. | Makes a subjective assumption about the risk settings associated with minimum performance levels. |
| An inspecting engineer shall be engaged to. . . | Outside the scope of the Building Code, as it is prescriptive about a role in the building process, rather than the performance of the building. |
| The work must be sufficient to allow adequate. . . | Not a specific requirement, ambiguous and open to interpretation. |
| The contract for the work shall ensure. . . | Relates to contractual arrangements. |
| The work shall use product X made by manufacturer Y. | Requirement to use a specific product relates to commercial requirements. |
| The product shall be maintained to achieve durability requirements of the Building Code. | Duplicates and could contradict other Building Code requirements, also not a specific requirement. |
| Loading shall be determined in accordance with NZS 3604 or AS/NZS 1170. | Makes reference to acceptable solution and verification method standards: only one type of compliance pathway can be referenced by a standard, to match the type of document in which the standard is referenced. |
| The work should be carried out in accordance with xxx. | "Should" can only be used for informative content statements, does not infer a requirement. |

# Building Code Operating Protocol – Tier framework to support standards in the Building Code system

**Application of the protocol:** This document outlines the approach used to guide decisions about the role of the regulator in the maintenance/ updating of existing standards, both New Zealand and joint New Zealand/Australian standards, relevant to the Building Code and its associated supporting documents (acceptable solutions and verification methods).

**When to use the Protocol:** This document is intended to be taken into account in both the development of acceptable solutions and verification methods, and in the development of standards intended to be used for the Building Code. The principles of the protocol would also apply to other types of information being considered for incorporation into acceptable solutions and verification methods.

## Why do we have a tier framework for standards?

The Building Act 2004 section 405 provides for the citation of standards and incorporation into regulations (e.g. the Building Code), acceptable solutions and verification methods. This essentially allows for detailed information, arrived at through a formal process, to be included in these regulatory instruments.

In ensuring that the Building Code and compliance pathways keep pace with changing trends, demands and technology, it is important that the content of the referenced standards are maintained, and the citations within the acceptable solutions and verification methods are updated accordingly. However, the process that facilitates an update to a standard can require considerable resources. In addition, the Building Act 2004 section 406 states that updated standards are given legal status only after the reference has been updated in the Building Code system, following analysis of its regulatory impact. Therefore an approach is needed to plan and prioritise this work. The tier framework provides criteria to assess standards against, and groups them into tiers to support planning and prioritisation discussions.

Note that compared with international standards, including joint AS/NZS standards, the building regulator has greater ability to participate on committees and provide their perspective throughout the development process. However, the way standards are used in the Building Code system does not differ between international and New Zealand standards.

## How do we use the tier framework for standards?

All standards (or standard series where relevant) that are directly referenced in the Building Code, acceptable solutions or verification methods, are assessed against criteria before being grouped into three categories (Tier 1, 2 or 3). These criteria identify the extent to which the standard requires closer involvement of the building regulator, given the importance of the content to the regulatory system, and the level of risk it addresses.

The criteria are:

1 **Risk severity** The standard is referenced by a Building Code clause that addresses severe risks, either to life safety or significant economic losses.

2 **Contribution to the Building Code** The standard is critical to demonstrating compliance with the Building Code and addresses needs that are specific to New Zealand that are not available from other sources.

3 **Design focus** The scope of the standard focusses on the technical aspects of building design, rather than the manufacturing or testing of construction products, and so the standard development costs are unlikely to be covered elsewhere in the building industry. It is anticipated that Tier 1 standards will be exclusively related to building design. Tier 2 may contain standards that relate to the manufacture or testing of construction products that present a high risk of regulatory failure, and compliance with Building Code requirements cannot be demonstrated in an alternative way.

The tiers determine a default level of involvement by the building and construction regulator as summarised in Table 2.

Those that score highest against the criteria are in Tier 1, followed by Tier 2, with the remainder in Tier 3.

Currently there is capacity for the regulator to commission the review/update of four to five NZ standards at any one time, envisaged to be a mixture of Tier 1 and Tier 2 standards. Fewer standards in the Tier 1 grouping relative to Tier 2 will mean that the Tier 1 standards will likely be reviewed more regularly over time, in addition to having the full funding and involvement of the regulator.

**TABLE 2: Level of the building and construction regulator involvement in standards**

| Criteria | Tier 1 | Tier 2 | Tier 3 |
|---|---|---|---|
| **Type of standard** | NZS or AS/NZS(1) | NZS or AS/NZS(1) | Any (NZS, AS/NZS, ISO etc) |
| **Approximate no of standards in Tier** | 10 | 30 | All other primary references (~300) |
| **Level of funding by regulator** | Full(2) | Partial | None |
| **Regulator Committee representation** | Yes | As required | No |
| **Regulator Committee voting** | Yes | As required | No |
| **Sponsored for free public access (where possible)** | Yes | Yes | As required |

**Notes:**

(1) Of the approximately 350 standards that are primary references in the Building Code system, 88 are New Zealand standards and 81 are joint Australian/New Zealand standards. In order to achieve the intended level of involvement in the development and update of standards, the regulator would aim to ensure that all Tier 1 and 2 standards are New Zealand standards, or at least AS/NZS standards with an appropriate level of involvement in the AS/NZS standard committee.

(2) For NZ standards and as appropriate for joint AS/NZ standards.

To achieve a reasonable maximum period between reviews, Tier 1 is limited to 10 standards, and Tier 2 is limited to approximately 30 standards. These numbers will be tested in practice and could be reviewed in future.

Other factors that will be considered by the regulator when planning our forward work programme to determine which Tier 1 and Tier 2 standards to put forward for review will include:

- **Strategic Alignment** – whether there is a Government directive or strategic initiative that relies on updating or development of a standard.
- **Currency** – the extent to which technology or practices have changed since the standard was developed.

Note this proposed tier framework addresses standards that are directly referenced in the acceptable solutions and verification methods, commonly known as “primary references”. It does not include other standards that are referenced in primary references, commonly known as “secondary references”, and subsequent higher order references. The Building Act does not specifically address which version of these secondary references must be complied with as part of the acceptable solution or verification method. Generally, the regulator’s focus is on primary references. The default level of support for standards incorporated via secondary references would align with Tier 3 standards, although more involvement could be considered in line with the criteria in this protocol if we become aware of any particular issues or risks.

Standards that have been assessed to be in Tier 1 and Tier 2 are listed in Appendix A.

## What does the tier status mean for standards in the Building Code?

Standards that are directly referenced in acceptable solutions and verification methods that are not included in Tiers 1 or 2 are by default in Tier 3. As the regulator, MBIE will look to the sector to take the lead with the ongoing maintenance and development of these standards. A range of options to do this can be explored with Standards New Zealand, such as identifying suitable alternative co-funders for the development of existing New Zealand standards, or referencing suitable international standards that could be used to demonstrate compliance with the Building Code.

The operating protocol for referencing standards in the Building Code system is intended to clarify what is required in a standard before it is referenced in the Building Code. This offers greater certainty and flexibility for the sector to develop standards or other information that is required to keep methods for demonstrating compliance up-to-date and fit for purpose. It is intended to enable the process of referencing standards in the Building Code system to be as efficient as possible.

Standards New Zealand can offer further support and information on the process for developing or updating standards: guidance is available on their website at www.standards.govt.nz.

# Appendix A  Standards tier status assessment

The standards proposed for Tier 1 and Tier 2 are provided in Table A.1 and Table A.2.

These have been assessed against the criteria outlined in this protocol. The score for the standard against each criteria is indicated by:

VH = Very High  M = Medium

H = High  L = Low

The standards in Tier 3 comprise the remaining standards (approximately 300) that are primary references in the Building Code system (ie. referenced directly in the acceptable solutions and verification methods).

**TABLE A.1: Tier 1 standards for the purposes of building regulation**

| Standard prefix and number[1] | Standard title | Assessment Criteria Score | | |
|---|---|---|---|---|
| | | Risk severity | Contribution to the Building Code | Design Focus |
| **AS/NZS 1170 0-3** | Structural Design Actions series (General principles; Permanent, Imposed & other actions; Wind; Snow & ice) | VH | VH | VH |
| **NZS 1170 5** | Structural Design Actions - Part 5: Earthquake design actions - New Zealand | VH | VH | VH |
| **NZS 3101 1&2** | Concrete structures standard | VH | VH | VH |
| **NZS 3404 1&2** | Steel structures standard | VH | VH | VH |
| **NZS 3603[2]** | Timber structures standard | VH | VH | VH |
| **NZS 3604** | Timber-framed buildings | VH | VH | VH |
| **NZS 4121** | Design for access and mobility - Buildings and associated facilities | M | VH | VH |
| **NZS 4512** | Fire detection and alarm systems in buildings | VH | VH | H |
| **NZS 4541** | Automatic fire sprinkler systems | VH | VH | H |
| **AS/NZS 3500 1-4** | Plumbing and drainage series (Water services; Sanitary plumbing and drainage; Stormwater drainage; Heated water services) | VH | VH | VH |

**Notes:**

(1) The standard version (year of publication) will change over time.

(2) NZS 3603 is intended to be superseded in the future by NZS AS 1720.1 and AS/NZS 1720.4.

# Appendix A

**TABLE A.2: Tier 2 standards for the purposes of building regulation**

| Standard prefix and number[1] | Standard title | Assessment Criteria Score | | |
|---|---|---|---|---|
| | | Risk severity | Contribution to the Building Code | Design Focus |
| **AS 1668 1&2** | The use of ventilation and air-conditioning in buildings series (Fire and Smoke control in multi-compartment buildings; Ventilation design for indoor air contaminant control) | VH | VH | VH |
| **AS 2159** | Rules for the design and installation of piling | VH | H | VH |
| **AS 2293 1&3** | Emergency escape lighting and exit signs for buildings series (System design, installation and operation; Emergency escape luminaries and exit signs) | VH | VH | VH |
| **AS/NZS 1547** | On-site domestic wastewater management | H | VH | VH |
| **AS/NZS 2033** | Installation of polyethylene pipe systems | VH | VH | M |
| **AS/NZS 2293 2** | Emergency evacuation lighting for buildings - Inspection and maintenance | VH | VH | H |
| **AS/NZS 4020** | Testing of products for use in contact with drinking water | VH | H | M |
| **AS/NZS 4284** | Testing of building facades | H | VH | M |
| **AS/NZS 4671** | Steel reinforcing materials | VH | H | M |
| **NZS 3602** | Timber and wood-based products for use in building | H | VH | H |
| **NZS 4211** | Specification for performance of windows | H | VH | VH |
| **NZS 4214** | Methods of determining the total thermal resistance of parts of buildings | M | VH | VH |
| **NZS 4218** | Thermal insulation - Housing and small buildings | M | VH | VH |
| **NZS 4219** | Seismic performance of engineering systems in buildings | VH | H | M |
| **NZS 4223 2&3** | Glazing in buildings series (Insulating glass units; Human impact safety requirements) | VH | M | M |
| **NZS 4229** | Concrete masonry buildings not requiring specific engineering design | VH | VH | VH |

**Notes:**

(1) The standard version (year of publication) will change over time.

# Appendix A

**TABLE A.2: Tier 2 standards for the purposes of building regulation – CONTINUED**

| Standard prefix and number[1] | Standard title | Assessment Criteria Score | | |
|---|---|---|---|---|
| | | Risk severity | Contribution to the Building Code | Design Focus |
| **NZS 4230** | Design of reinforced concrete masonry structures | VH | H | VH |
| **NZS 4243 1** | Energy efficiency - Large buildings - Building thermal envelope | M | VH | VH |
| **NZS 4303** | Ventilation for acceptable indoor air quality | M | VH | VH |
| **NZS 4305** | Energy efficiency - Domestic type hot water systems | M | VH | VH |
| **NZS 4332** | Non-domestic passenger and goods lifts | VH | VH | M |
| **NZS 4334** | Platform lifts and low-speed lifts | M | VH | M |
| **NZS 4402** | Methods of testing soils for civil engineering purposes series (multiple parts) | VH | H | M |
| **NZS 4431** | Code of practice for earth fill for residential development | VH | H | VH |
| **NZS 4510** | Fire hydrant systems for buildings | VH | VH | H |
| **NZS 4514** | Interconnected smoke alarms for houses | VH | VH | H |
| **NZS 4515** | Fire sprinkler systems for life safety in sleeping occupancies (up to 2000 square metres) | VH | VH | H |
| **NZS 4517** | Fire sprinkler systems for houses | VH | VH | H |
| **NZS 4520** | Fire resistant doorsets | VH | VH | M |
| **NZS 6104** | Specification for emergency electricity supply in buildings | M | VH | VH |
| **NZS 6703** | Code of practice for interior lighting design | M | VH | VH |
| **NZS 8500** | Safety barriers and fences around swimming pools, spas and hot tubs | H | VH | M |

**Notes:**

(1) The standard version (year of publication) will change over time.

BUILDING PERFORMANCE

**CONTACT DETAILS** PO Box 1473, Wellington 6140 | **T** 0800 242 243 | **E** info@building.govt.nz

For more information, visit **building govt nz**

ISBN 978-1-99-001997-5 (Online)



BP 6446

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

New Zealand Government