



Dear Customer

Please find attached the November 2017 amendments to C/VM2 – Verification Method: Framework for Fire Safety Design, published by the Ministry of Business, Innovation and Employment.

To update your printed copy of C/VM2, please make the following changes:

<b>Section</b>	<b>Previous version (Amendment 4)</b>	<b>Amendment 5, November 2017</b>
C/VM2 - Verification Method: Framework for Fire Safety Design		
Title pages	Remove title page and document history/status	Replace with new title page and document history/status
C/VM2 Part 1	Remove pages 11/12	Replace with new pages 11/12





**MINISTRY OF BUSINESS,  
INNOVATION & EMPLOYMENT**  
HĪKINA WHAKATUTUKI

**C/VM2**

**Verification Method: Framework for  
Fire Safety Design**

For New Zealand Building Code Clauses  
C1-C6 Protection from Fire



### Using this Verification Method

The Ministry of Business, Innovation and Employment may amend parts of this Verification Method at any time. People using this Verification Method should check on a regular basis whether new versions have been published. The current version can be downloaded from [www.building.govt.nz](http://www.building.govt.nz)

Users should make themselves familiar with the preface to the New Zealand Building Code Handbook, which describes the status of Verification Methods and explains other ways of achieving compliance.

Defined words (italicised in the text) are explained in the Building Code Clause A2 and in the Definitions section of this Verification Method. Classified uses of buildings are explained in the Building Code Clause A1. Importance levels of building are buildings (italicised in the text) are explained in the Building Code Clause A3.

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### New Zealand Government

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## Status of C/VM2

This Verification Method C/VM2, Framework for Fire Safety Design, provides a means of compliance with the New Zealand Building Code Clauses C1-C6 Protection from Fire. It is issued under section 22 of the Building Act 2004 as a Verification Method.

This Verification Method is one way that can be used to show compliance with the New Zealand Building Code Clauses C1-C6 Protection from Fire. Other ways of complying with the Building Code are described, in general terms, in the preface of the New Zealand Building Code Handbook.

### When can you use C/VM2

This Verification Method is effective from 24 November 2017. It can be used to show compliance with the Building Code Clauses C1-C6 Protection from Fire. It does not apply to building consent applications submitted before 24 November 2017.

The previous version, Amendment 4, of this Verification Method can be used to show compliance with the Building Code Clauses C1-C6 Protection from Fire until 23 November 2017. It can be used for building consent applications submitted before 24 November 2017.

Document History		
	Date	Alterations
New document	Effective from 10 April 2012	C/VM2 is a new publication that can be used to show compliance with the Building Code Clauses C1-C6 Protection from Fire.
Amendment 1 (Errata 1)	Effective from 30 April 2012	p. 11, 1.2 p. 13, Figure 1.1 a) p. 19, Figure 1.1 g) p. 32, Table 2.3 p. 39, Table 3.3 p. 59, 4.9
Amendment 2 (Errata 2)	Effective from 15 February 2013 until 18 June 2014	p. 9 Definitions pp. 25–26 2.2.1 p. 33 Table 2.4 p. 40 3.2.4 p. 41 3.2.7 p. 58 4.8 p. 59 4.9 p. 61 4.10 p. 64 Index
Amendment 3	Effective from 19 December 2013 until 28 February 2015	p. 5 Contents p. 7 References p. 10 Definitions p. 15 Figure 1.1 c pp. 25–26 2.2.1 pp. 28–32 Tables 2.1, 2.2, 2.3 p. 35 Table 3.1 pp. 39–42 3.2.4, 3.4, Table 3.3 pp. 49–64 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, Tables 4.1 and 4.2 pp. 66–68 A1.1, A1.4, A1.5, Table A1 p. 69 Index
Amendment 4	Effective from 1 July 2014 until 23 November 2017	p. 5–6 Contents pp. 7–8 References p. 10–10A Definitions p. 11–13 1.2, 1.3, Figure 1.1 pp. 14–23 Figure 1.1 p. 24 1.5, Table 1.1 pp. 25–28, 30–31, 33–33A 2.2.1, 2.4, 2.4.4, 2.5, Tables 2.1, 2.2 and 2.4 pp. 34–44 3.1, 3.2.4, 3.2.5, 3.2.6, 3.3, 3.4, 3.4.1, 3.6.1, 3.6.3, 3.6.5, Tables 3.1, 3.2, 3.3 p. 45 Part 4 Contents pp. 46–47 4.1, 4.2 pp. 50–52, 4.5 pp. 53–56, 4.6, Table 4.2 p. 59 4.7 pp. 61–62 4.8 p. 63 4.9 p. 65 4.10 pp. 69–70 A1.6, A1.7, Tables A.1 and A.2 p. 71 Appendix B, Table B1 p. 72 Index
Amendment 5	Effective from 24 November 2017	pp. 11–12 1.2 Scope



# 1 Introduction and scope

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- 1.3 How to use this Verification Method
- 1.4 Design scenarios: Building Code objectives and performance criteria

## 1.1 Purpose

This is a Verification Method for the specific design of *buildings* to demonstrate compliance with NZBC C1 to C6 Protection from Fire. It is suitable for use by professional fire engineers who are proficient in the use of fire engineering modelling methods.

## 1.2 Scope

**1.2.1** This Verification Method is for *fire* designs for all *buildings* except those *buildings* that:

- a) Do not have simultaneous evacuation schemes that evacuate immediately to the outside, or
- b) Require a managed evacuation, or
- c) Contain *fire hazards* that are not defined by Part 2 of this Verification Method “The rules and parameters for the Design Scenarios”.

### Comment:

1. This Verification Method is an analysis tool for *buildings* with simultaneous evacuation schemes that evacuate immediately to the outside, and with typical *fire growth* rates.
2. Additional *fire* safety precautions to those determined by this Verification Method may be necessary to facilitate approval of the intended evacuation procedures to meet the Fire Safety and Evacuation of Buildings Regulations 2006.
3. Examples of *buildings* outside of the scope include hospitals, care homes, stadia, principal transport terminals, large shopping malls (greater than 10,000 m<sup>2</sup> and contain mezzanine floors), tall *buildings* (greater than 60 metres or 20 storeys in height) or tunnels.
4. *Fire* safety design for *buildings* that are outside of the scope can be performed using the Fire Engineering Brief (FEB) process and the appropriate parts of this Verification Method, which can be considered by the *building consent authority* as an *alternative solution*.

Errata 1  
Amend 4

Amend 5  
Nov 2017

**1.2.2** This Verification Method does not provide *fire* design where there is use, storage or processing of *hazardous substances*.

**Comment:**

Compliance with NZBC F3 and the Hazardous Substances and New Organisms (HSNO) Act 1996 should be considered where applicable in addition to the requirements of this Verification Method.

Amend 5  
Nov 2017

### 1.3 How to use this Verification Method

This Verification Method sets out 10 *design scenarios* that must each be considered and designed for, where appropriate, in order to achieve compliance with NZBC C: Protection from Fire.

The concept *fire* design shall be trialled using *building* specific *fire* design requirements ascertained via the Fire Engineering Brief (FEB) process as described in internationally recognised *fire* engineering process documents.

**Comment:**

There are a number of internationally recognised process documents including the International Fire Engineering Guidelines and others published by British Standards and the Society for Fire Protection Engineers.

Amend 4  
July 2014

Follow the process schematically illustrated in Figure 1.1 as appropriate, analysing or testing the *fire* design against the *design scenarios* as applicable and modelling the *design scenario*: CF Challenging Fire (see Paragraph 4.9) a number of times with the *design fire* positioned in the most challenging locations.

**Comment:**

ASET/RSET and other computational modelling is only required for a few of the *design scenarios*. Many can be satisfied by inspection or by providing certain features (eg, *fire separations* or smoke detection systems).

In many cases the location that is the most challenging (that which will provide the shortest ASET/RSET) will be easily determined.

In Figure 1.1, the numbered references are to paragraph numbers in this Verification Method.

Figure 1.1 is guidance information illustrating how the use of this Verification Method – in particular the *design scenarios* – fits into the general iterative *fire* design process. The flowchart assumes design starts at concept design stage. The sequence of assessing each of the *design scenarios* may vary from that idealised in Figure 1.1. The design process outlined in the flowchart will vary when using this Verification Method for assessing Code compliance of existing *buildings*. The overall process described in Figure 1.1 is not itself a normative part of C/VM2.

The communication process relating to FEB development will vary for each project and may include both written and verbal communication to collect stakeholder considerations and test options when preparing trial designs. Similarly, the form of FEB documentation will vary depending on the complexity and scale of the project and the design issues. The key features of both the FEB communication and documentation are that it is unambiguous, complete (i.e. provided with appropriate context) and recorded in some form for later reference.

Amends  
3 and 4