

G4 Ventilation

Verification Method G4/VM1

Ventilation rate and air purity

FIFTH EDITION | EFFECTIVE 28 JULY 2025

Preface

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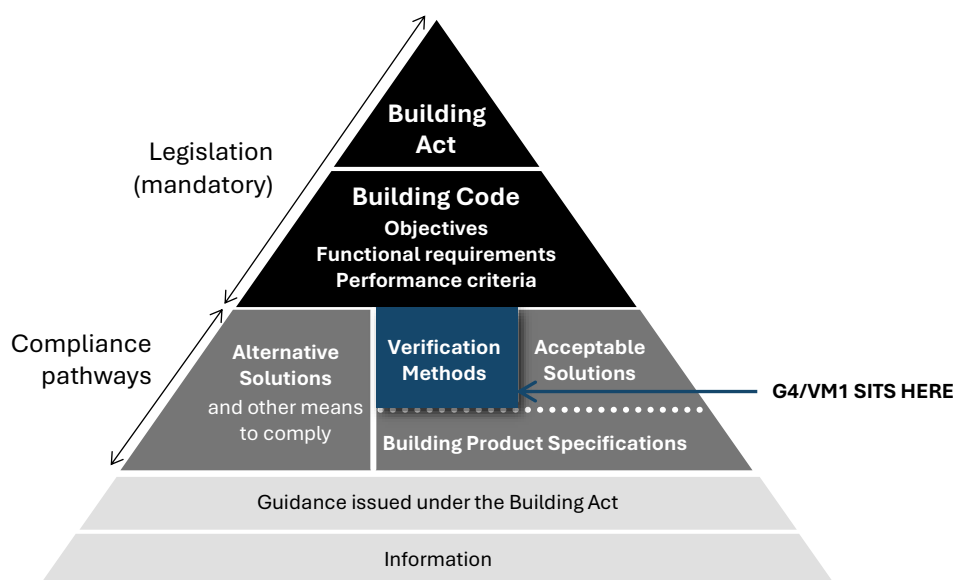
Document status

This document (G4/VM1) is a verification method issued under section 22 (1) of the Building Act 2004 and is effective on 25 July 2025. It does not apply to building consent applications submitted before 28 July 2025. The previous Verification Method G4/VM1 Fourth Edition can be used to show compliance until 31 July 2026 and can be used for building consent applications submitted before 1 August 2026.

Building Code regulatory system

Each verification method outlines the provisions of the Building Code that it relates to. Complying with an acceptable solution or verification method are ways of complying with that part of the Building Code. Other options for establishing compliance are listed in [section 19 of the Building Act](#).

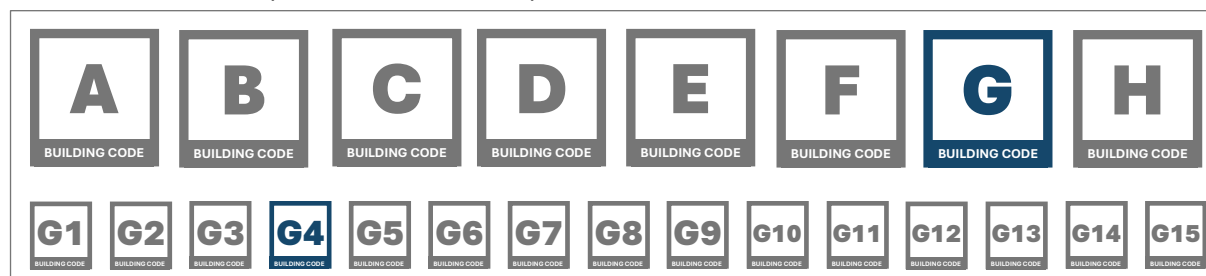
Schematic of the Building Code system



A building design must take into account all parts of the Building Code. The Building Code is located in Schedule 1 of the Building Regulations 1992 and available online at www.legislation.govt.nz.

The part of the Building Code that this verification method relates to is clause G4 Ventilation.

Information on the scope of this document is provided in [Part 1. General](#).



Further information about the Building Code, including objectives, functional requirements, performance criteria, acceptable solutions, and verification methods, is available at www.building.govt.nz.

Main changes in this version and features of this document

Main changes in this version

This verification method is the fifth edition of G4/VM1. The main changes from the previous version are:

- The document has been published in a standalone format and the layout has been revised to improve clarity. This includes using a common structure for headings and text throughout the verification method.
- Portions of text have been re-written to enhance clarity in the document and provide consistent language with other acceptable solutions and verification methods.
- A title of the document has been provided to the document to reflect the scope of the verification method. Additional information on the document and its scope is provided in [Part 1. General](#).
- References have been revised to reflect the documents cited in this verification method solution in [Appendix A](#).
- Definitions have been revised to reflect the terms used in this verification method in [Appendix B](#).

People using this document should check for amendments on a regular basis. The Ministry of Business, Innovation and Employment may amend any part of any acceptable solution or verification method at any time. Up-to-date versions of acceptable solutions or verification methods are available from www.building.govt.nz.

Features of this document

- For the purposes of Building Code compliance, the standards and documents referenced in this verification method must be the editions, along with their specific amendments listed in [Appendix A](#).
- Words in *italic* are defined at the end of this document in [Appendix B](#).
- Hyperlinks are provided to cross-references within this document and to external websites and appear with a [blue underline](#).
- Appendices to this verification method are part of, and have equal status to, the verification method. Figures are informative only and the wording of the paragraphs takes precedence. Text boxes headed 'COMMENT' occur throughout this document and are for guidance purposes only.
- A consistent number system has been used throughout this document. The first number indicates the Part of the document, the second indicates the Section in the Part, the third is the Subsection, and the fourth is the Paragraph. This structure is illustrated as follows:

2	Part
2.5	Section
2.5.3	Subsection
2.5.3.1	Paragraph
2.5.3.1(a)	Paragraph (as a portion of the relevant paragraph)
2.5.3.1(a)(i)	Paragraph (as a portion of the relevant paragraph)

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General and Ventilation rate and air purity

Part 1. General

1.1 Introduction

1.1.1 Scope of this document

- 1.1.1.1 This verification method can be used for commissioning ducted mechanical systems and verification of air purity in workplaces achieved by ventilation.

1.1.2 Items outside the scope of this document

- 1.1.2.1 There are no specific items outside the scope of this document.

1.1.3 Compliance pathway

- 1.1.3.1 This verification method is one option that provides a means of establishing compliance with the functional requirements and performance criteria in Building Code clause G4 Ventilation.
- 1.1.3.2 If this verification method cannot be followed in full, use an alternative means to demonstrate compliance.

Part 2. Ventilation rate and air purity

2.1 Ventilation rate

2.1.1 Verification of the design

- 2.1.1.1 In ducted mechanical ventilation systems, the air-flow rate (and consequently number of air changes), may be verified using the methods of measurement given in the CIBSE Code Series A, Appendix A3.1.
- 2.1.1.2 For determining the volume of *outdoor air*, measurements shall be taken close to the *outdoor air* inlet.

2.2 Air purity

2.2.1 Verification of the design

- 2.2.1.1 The acceptability of indoor air purity for workplaces may be verified by demonstrating that contaminant levels do not exceed the limits recommended in the Worksafe document “Workplace Exposure Standards and Biological Exposure Indices”.

References and Definitions

Appendix A. References

For the purposes of Building Code compliance, the standards referenced in this verification method must be the editions, along with their specific amendments, listed below.

Chartered Institution of Building Services Engineers

Where quoted

CIBSE Code Series A:1996 Air distribution systems

[2.1.1.1](#)

This document can be accessed from www.cibse.org.

Worksafe New Zealand Mahi Haumaru Aotearoa

Where quoted

Workplace exposure standards and biological exposure indices 10th Edition,
November 2018

[2.2.1.1](#)

This document can be accessed from www.worksafe.govt.nz.

Appendix B. Definitions

These definitions are specific to this verification method.

Term	Definition
Building	Has the meaning given to it by sections 8 and 9 of the Building Act 2004.
Outdoor air	Air as typically comprising by volume: <ul style="list-style-type: none"> i) oxygen 20.94% ii) carbon dioxide 0.03% iii) nitrogen and other inert gases 79.03%.

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