BUILDING PERFORMANCE

B2

B2 Durability

Verification Method B2/VM1

Durability of buildings elements using in-service history, laboratory testing, and comparisons to similar materials

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MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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Te Kāwanatanga o Aotearoa
New Zealand Government

Preface

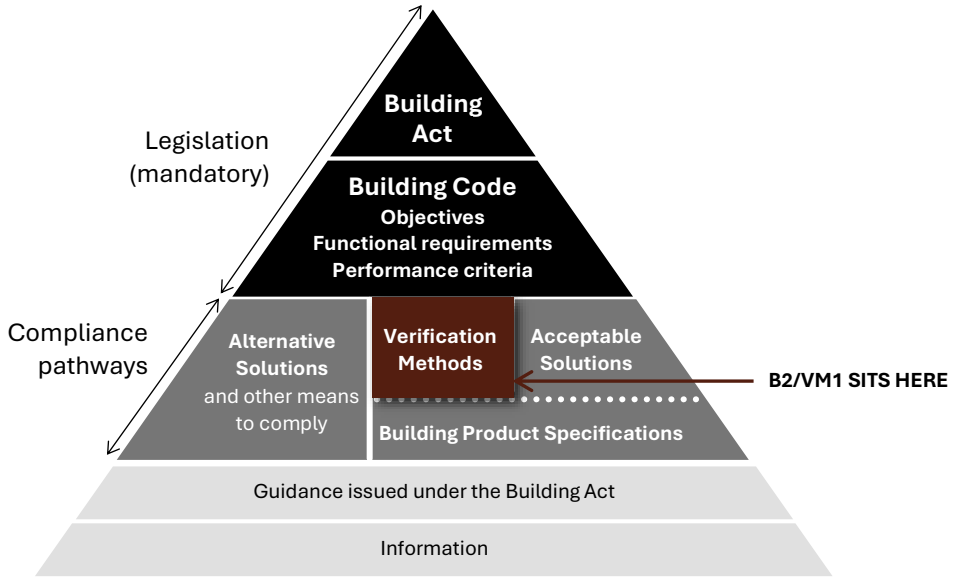
Document status

This document (B2/VM1) is a verification method issued under section 22 (1) of the Building Act 2004 and is effective on 28 July 2025. It does not apply to building consent applications submitted before 28 July 2025. The previous Verification Method B2/VM1 Second Edition, as amended, 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

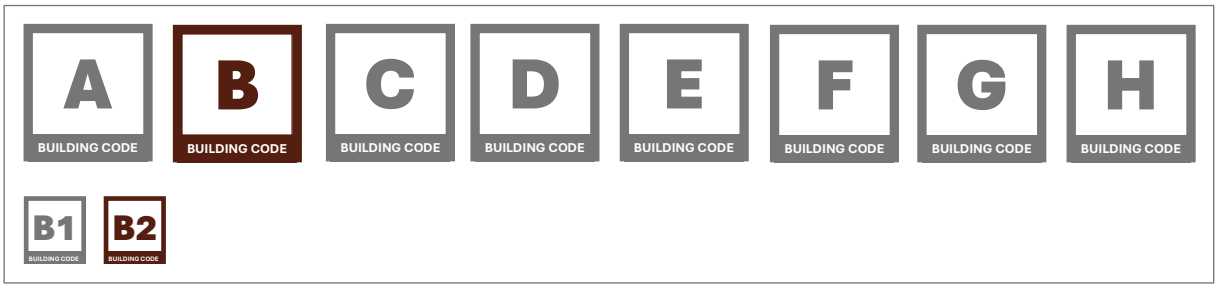
Each verification method outlines the provisions of the Building Code that it relates to. Complying with an acceptable solution or verification method are ways of complying with that part of the Building Code. Other options for establishing compliance are listed in section 19 of the Building Act.

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 B2 Durability. 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

This verification method is the third edition of B2/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.
- Minor amendments have been made to correct typos, grammar, cross-references, punctuation, wording, and formatting of the document. These amendments do not affect the level of performance required in the document but may assist in the interpretation of the requirements.
- A title has been provided for the document to reflect the scope of verification method. Additional information on the document and its scope is provided in Part 1. General.
- 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

- There are no standards or other documents referenced in this verification method 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. 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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Part 1. General

1.1 Introduction

1.1.1 Scope of this document

1.1.1.1 The scope of this verification method includes provisions for determining the durability for all *building elements*.

1.1.2 Items outside the scope of this document

1.1.2.1 There are no limitations to the scope of this verification method for determining the durability of *building elements*.

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 B2 Durability. It can be used to demonstrate compliance with B2.2, B2.3.1, and B2.3.2.

1.1.3.2 If this verification method cannot be followed in full, use an alternative means to demonstrate compliance.

Part 2. Durability of building elements

2.1 Durability evaluations

2.1.1 Overview

2.1.1.1 To demonstrate that a *building element* will comply with clauses B2.3.1 and B2.3.2 of the Building Code, its performance shall be verified for the expected in-service exposure conditions.

2.1.1.2 Verification of the durability and the expected in-service exposure conditions shall include one or more of the following:

a) in-service history in Subsection 2.1.2; and/or

b) laboratory testing in Subsection 2.1.3; and/or

c) comparable performance of similar *building elements* in Subsection 2.1.4.

2.1.2 In-service history

2.1.2.1 Verification of durability based on in-service history of a *building element*, including materials, components, and systems shall take into account but not be limited to:

a) length of service; and

b) environment of use; and

c) intensity of use; and

d) any reaction with adjacent materials; and

e) limitations in performance; and

f) degree of degradation; and

g) changes in formulation.

2.1.3 Laboratory testing

2.1.3.1 Verification of durability based on successful performance in a laboratory test shall be accompanied by an assessment of the tests performed, their relevance to field and service conditions, and in particular:

a) types of degradation mechanisms likely to be induced by testing; and

b) the degradation mechanisms likely in service; and

c) details of methods of assessment; and

d) variability of results; and

e) the relevance of the test to the *building element* under study.

2.1.4 Similar building elements

2.1.4.1 For the purposes of evaluation, a *building element* may be considered as similar to another *building element* with proven performance, if both are subject to the same controls for composition and overall performance. Where such a direct comparison is not possible, the *building element* shall be independently assessed to determine the degree of similarity.

> COMMENT: Examples of such controls are acceptable solutions, verification methods, or standards.

2.1.4.2 Assessment shall take into account but not be limited to:

a) product composition; and

b) method and quality assurance of manufacture; and

c) degradation mechanisms; and
d) local environment; and
e) conditions of use; and
f) required maintenance; and
g) performance in use.

COMMENT:
Environment

1. To be acceptable, any opinion in support of the assessed durability for a building element shall clearly identify the conditions of use and the environment under which that durability will be achieved. If the building element can be reasonably expected to be used in circumstances which will reduce the durability, any limitations in use shall be clearly identified and evaluated.
2. Circumstances which need to be considered include, but are not limited to:

   a. maintenance required to achieve the required durability (such as painting, cleaning, replacing high wear items such as washers); and

   b. installation details of the total system (such as fixings, flashings, jointing materials); and

   c. compatibility with other materials (such as galvanic corrosion, plasticiser migration); and

   d. locality or macroclimatic effects (such as coastal or thermal areas, wet or damp ground conditions); and

   e. microclimatic effects (such as sheltered areas on buildings such as eaves); and

   f. external environment influences (such as local industrial operations such as fertiliser works); and

   g. internal environment (such as swimming pools, chemical processing areas, sauna rooms)

Appendix A. References

There are no standards or other documents referenced in this verification method.

Appendix B. Definitions

These definitions are specific to this acceptable solution. Other defined terms italicised within the definitions are provided in clause A2 of the Building Code.

Term	Definition
Building	Has the meaning given to it by sections 8 and 9 of the Building Act 2004.
Building element	Any structural and non-structural component or assembly incorporated into or associated with a *building*. Included are *fixtures*, services, *drains*, permanent mechanical installations for access, glazing, partitions, ceilings and temporary supports.
Specified intended life	has the meaning given to it by section 113(3) of the Building Act 2004.

BUILDING PERFORMANCE

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