Building Consents - Demonstrating Compliance

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June 2025

Building Consents - Resilience and Infrastructure

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Introduction

This document provides guidance on demonstrating compliance with the New Zealand Building Code when lodging a building consent application.

It applies to projects where solutions are deemed to comply and to those designated as alternative solutions.

It is aimed at designers, developers, product manufacturers and suppliers to help you develop robust compliance pathways. It outlines various methods you can use to demonstrate compliance of building products and methods, solutions with specific materials, systems, and construction details as required by the Building Code.

It covers potential issues for you to consider and how these may be addressed in order for Auckland Council to consider and approve a building consent application. We will make our decision based on the information contained in your application. If this is incomplete or does not meet the requirements of the Building Code, it risks delay and additional costs for you.

Auckland Council is a building consent authority. This means one of our roles is to approve or decline building proposals. Owners, designers and builders are each accountable for ensuring:

- plans and specifications for building work will meet the Building Code
- work complies with the building consent or, where a consent is not required, complies with the Building Code.

This document contains five sections:

- Section One: Legislation
- Section Two: Compliance pathways
- Section Three: Supporting documents
- Section Four: Onsite
- Section Five: Appendices.

The guidance provided here is general in nature and aims to enhance clarity and understanding of how to demonstrate compliance. Auckland Council can arrange pre-application meetings to streamline the consent process for you and for the council.

SECTION ONE: Legislation

Governing legislation and rules

Building in New Zealand is governed by a three-tier structure overseen by the Building Act 2004 and including building regulations and the New Zealand Building Code. These specify the mandatory requirements you must follow.

The Building Act 2004

The Building Act 2004 (the Act) sets out the rules for the construction, alteration, demolition, and maintenance of new and existing buildings in New Zealand. This document is based on this act.

Granting building consent

Section 49 of the Act succinctly states council's regulatory responsibility when assessing a building consent application and legal requirement to grant the consent once the threshold is reached.

49 Grant of building consent

(1) A building consent authority must grant a building consent if it is satisfied on reasonable grounds that the provisions of the building code would be met if the building work were properly completed in accordance with the plans and specifications that accompanied the application.

(2) However, a building consent authority is not required to grant a building consent until it receives—

(a) any charge or fee fixed by it in relation to the consent; and

(b) any levy payable under section 53.

(c) *[Repealed]*

Figure 1. The Building Act, 2004, s.49, 95.

The Ministry of Business, Innovation & Employment (MBIE) defines satisfied on reasonable grounds (SORG) for assessing and granting building consent applications as follows.

Satisfied on reasonable grounds means having enough evidence or justification to believe something to be true or valid. It implies a level of confidence based on sound reasoning or facts, rather than on speculation or assumption.

Satisfied	to be adequate, to fulfil expectations
Reasonable	sensible and based on sound judgement. Balanced, based on the circumstances at hand. Needs to be an objective test, capable of measurement, assessment and comparison.
Grounds	base, evidence of fact

Figure 2. Satisfied on reasonable grounds breakdown, table by Ministry of Business, Innovation & Employment (MBIE), definition of satisfied on reasonable grounds in Building performance: Guidance Document, satisfied on reasonable grounds, (July 2024); 4.

This is the definition Auckland Council will consider when applications for building consent are received.

Designer responsibilities

While many parties may contribute to a building consent application, one person must coordinate these efforts and consolidate the information into a proposal. The designer, who holds primary responsibility for the building's design, is expected to fulfil this role.

14D Responsibilities of designer

(1) In subsection (2), **designer** means a person who prepares plans and specifications for building work or who gives advice on the compliance of building work with the building code.

(2) A designer is responsible for ensuring that the plans and specifications or the advice in question are sufficient to result in the building work complying with the building code, if the building work were properly completed in accordance with those plans and specifications or that advice.

Figure 3. The Building Act, 2004, s.14D, 63-64.

Where your application lack coordinated information and a comprehensive explanation, there is a risk Auckland Council will reject or refuse the application because it does not show how the proposal will comply with the Building Code performance requirements.

Manufacturer or supplier responsibilities

Product manufacturers and suppliers have specific responsibilities to ensure their products meet safety and performance standards as set out in s.14G of the Building Act.

14G Responsibilities of product manufacturer or supplier

(1) In subsection (2), **product manufacturer or supplier** means a person who manufactures or supplies a building product and who states that the product will, if installed in accordance with the technical data, plans, specifications, and advice prescribed by the manufacturer, comply with the relevant provisions of the building code.

(2) A product manufacturer or supplier is responsible for ensuring that the product will, if installed in accordance with the technical data, plans, specifications, and advice prescribed by the manufacturer, comply with the relevant provisions of the building code.

(3) A person who supplies a building product is responsible for ensuring that the person complies with Part 4B (building product information requirements).

Section 14G: inserted, on 28 November 2013, by section 7 of the Building Amendment Act 2013 (2013 No 100).

Section 14G(3): inserted, on 7 September 2022, by section 11 of the Building (Building Products and Methods, Modular Components, and Other Matters) Amendment Act 2021 (2021 No 21).

Figure 4. The Building Act, 2004, s.14G, 65.

Manufacturers and product suppliers must also consider their responsibilities under the Building (Building Product Information Requirements) Regulations 2022. These regulations

require manufacturers to provide accurate and detailed information about their products, including:

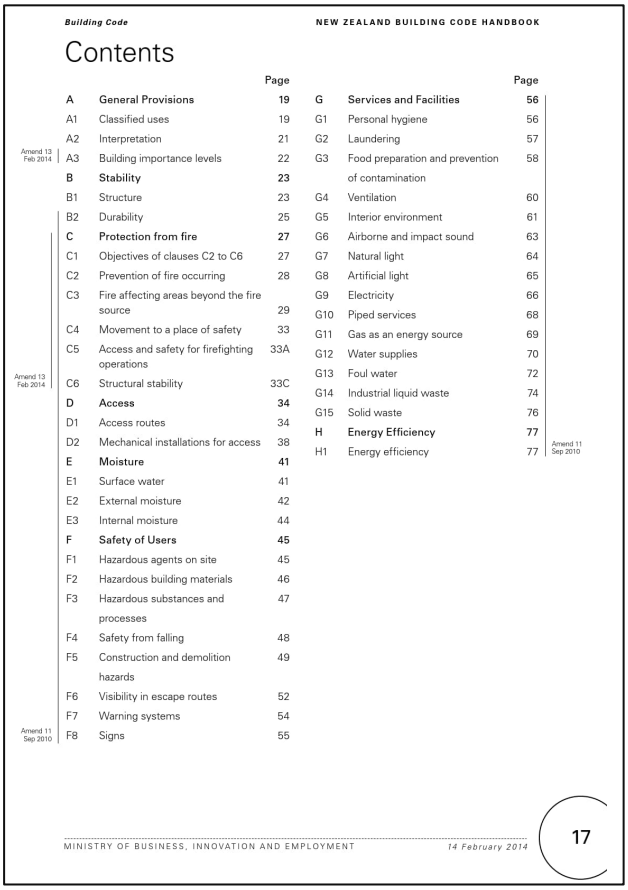
- specifying the product's intended use
- performance characteristics
- installation requirements
- any limitations or conditions for use.

Manufacturers must ensure that this information is readily accessible to those who may use or specify their products in building projects.

The New Zealand Building Code

The Building Code sets performance standards all building work must meet. It covers aspects such as stability, protection from fire, access, moisture, safety of users, services and facilities, and energy efficiency.

The Building Code is made up of three general clauses (A1- A3) and 38 technical clauses (B1-H1).



Building Code NEW ZEALAND BUILDING CODE HANDBOOK

Contents

Figure 5. New Zealand Building Code clauses, based on page by Ministry of Business, Innovation and Employment (MBIE), “contents” in New Zealand Building Code Handbook, edit 3rd, (May 2007): 17.

Each technical code clause is made up of objectives, functional requirements and performance requirements. These clauses and their performance requirements can be found in Schedule 1 of Building Regulations 1992.

Building Code Clause G7 – Natural Light has been marked up with its Objective, Functional requirement and Performance criteria highlighted:

Clause G7—Natural light

Provisions	Limits on application
Objective	
G7.1 The objective of this provision is to safeguard people from illness or loss of *amenity* due to isolation from natural light and the outside environment.	
Functional requirement	
G7.2 *Habitable spaces* shall provide *adequate* openings for natural light and for a visual awareness of the outside environment.	Requirement G7.2 shall apply only to *housing*, old people's homes and early childhood centres.
Performance	
G7.3.1 Natural light shall provide an *illuminance* of no less than 30 lux at floor level for 75% of the *standard year*.	
G7.3.2 Openings to give awareness of the outside shall be transparent and provided in suitable locations.	

Figure 6. Building Code Clause G7 – Natural Light.

SECTION TWO: Compliance pathways

Compliance pathways

This section outlines how developers, designers, product suppliers and manufacturers can demonstrate compliance through different pathways. It discusses factors that should be considered when lodging a building consent application.

Within Solutions deemed to comply and Alternative solutions, there are multiple options which can be used to demonstrate compliance, as shown below in Figure 7.

Familiarity with the New Zealand building control hierarchy will help you choose the most appropriate pathway for your project's design and construction.

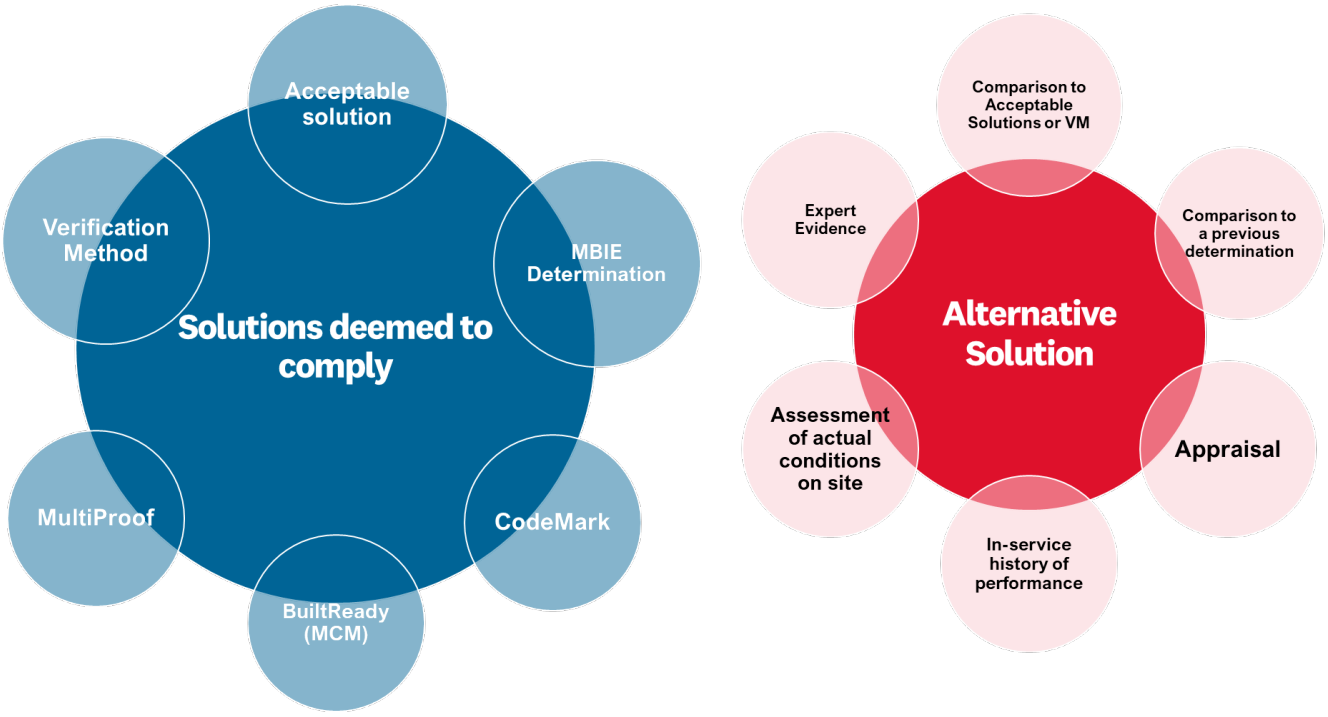


Figure 7. Solutions deemed to apply and Alternative solutions.

New Zealand building control hierarchy

Our building regulatory system combines legislation and regulations, as described by MBIE:

- The Building Act 2004 is the primary legislation governing the building and construction industry.
- The Building Code, contained in Schedule 1 of the Building Regulations 1992, sets out the minimum performance standards buildings must meet.
- Building regulations which detail particular building controls (e.g. prescribed forms, list of specified systems, definitions of 'change the use' and 'moderate earthquake', levies, fees and infringements).

Source: Building regulatory system, Ministry of Business, Innovation and Employment: https://www.mbie.govt.nz/building-and-energy/building/building-and-maintaining-new-zealands-homes-and-buildings

The diagram below illustrates the hierarchy of New Zealand building control. The top three tiers of the pyramid show the mandatory building legislation that must be followed. The pillars shows various paths for demonstrating compliance.

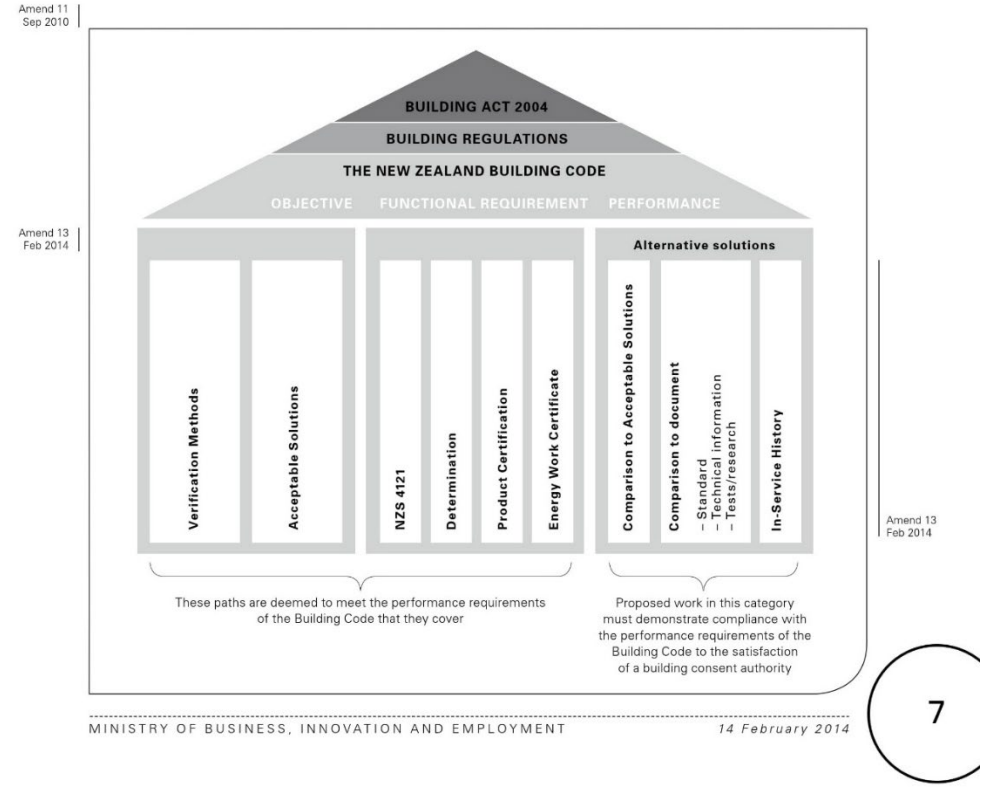


Figure 8. New Zealand regulatory and performance framework, by Ministry of Business, Innovation and Employment (MBIE), in New Zealand Building Code Handbook, edit 3rd, (May 2007): 7.

More detailed information is available at:

- Building Act 2004
- New Zealand Building Regulations 1992
- New Zealand Building Code
- Building consents

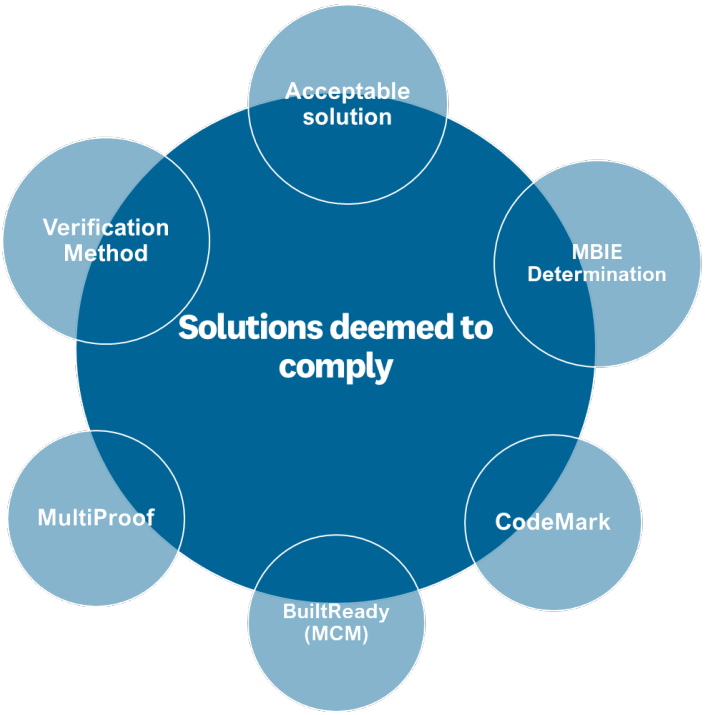
Deemed to comply solutions

Deemed to comply solutions are prescriptive ways of achieving compliance with the Building Code.

Acceptable solutions

These are documents produced by MBIE providing specific construction details, often for commonly used building materials, systems and methods. Designs following the acceptable solutions are deemed to comply with the Building Code and must be accepted by Auckland Council.

More information on Acceptable solutions and Verification methods



2.2.2 Verification methods
MBIE has cited tests or calculation methods to provide a method of demonstrating how the performance requirements of a specific Building Code clause will be achieved.

Not all Building Code clauses have verification methods, but those that do establish a methodology that can be used to verify compliance with the Building Code.

When an application includes a successful verification method to demonstrate compliance, Auckland Council must accept that the particular aspect achieves compliance with the Building Code.

More information on Acceptable solutions and Verification methods

Figure 9. (for reference only; identical to Figure 7)

Product certification

These are materials, systems and construction details that have been shown to comply with various clauses of the Building Code.

The product certification document will specify the Building Code clauses that have been considered and assessed for compliance. Any additional Building Code clauses relevant to a specific proposal must be addressed by way of a separate written explanation.

MBIE administers three voluntary certification schemes, with CodeMark being the most widely known. Building consent authorities, such as Auckland Council, 'must accept a CodeMark certificate as evidence of compliance with the Building Code, as long as the product is used in accordance with the use and limitations defined on the certificate'.

The Australian Watermark Certification is cited in G12 Acceptable Solution (G12/AS1) and G13 Acceptable Solution 1 & 2 (G13AS1 & G13AS2) as a method of demonstrating that products used in plumbing and drainage systems meet the requirements of the New Zealand Building Code.

Any documentation referred to in a product certification certificate must be provided in support of the building consent application. Often product certificates will be updated by the issuer, or a manufacturer will release new product literature which is not cited in the product certificate. When this happens, it is important that the product certificate valid at the time of lodgement is provided and any manual which is listed in the certificate accompanies the documents. This can mean sometimes the latest manufacturer's manual is not relevant. Co-ordination between the product certificate and its cited documents is most important.

Determinations

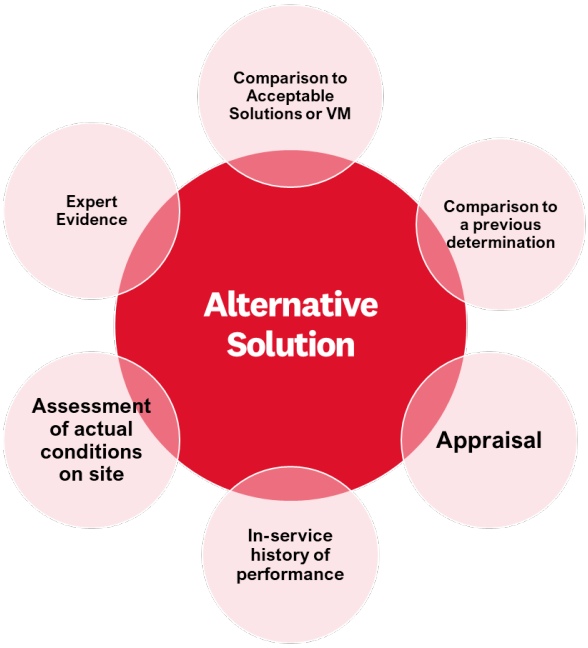
The MBIE determination process can be used to resolve doubts or disputes about building work. Most determinations review a decision made by a council (e.g. refusal to issue a building consent), but a determination may also consider whether an alternative solution complies with the Building Code.

The findings of a determination are legally binding for the application they relate to, and previous determinations can be used to provide guidance for future situations.

Alternative solutions

Several different paths can be used to demonstrate compliance as an alternative solution.

Alternative solutions

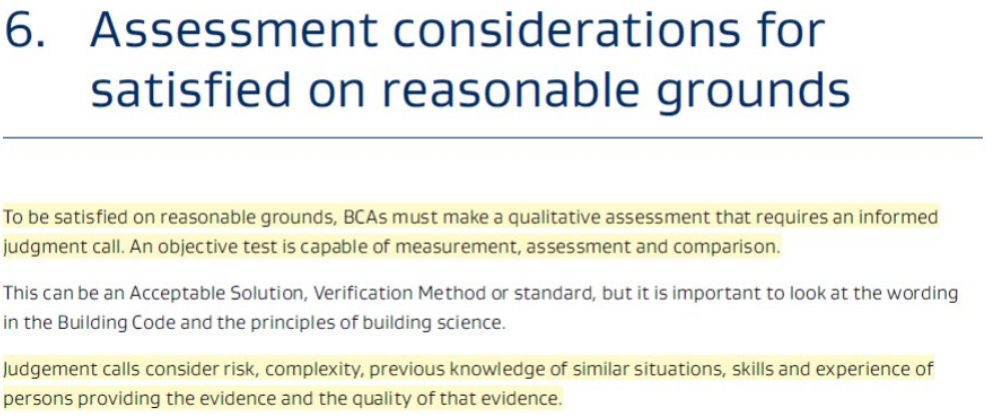


When assessing an alternative solution, Auckland Council will also consider the qualifications of the designer establishing and coordinating (if required) the compliance path.

- For complex solutions, the designer may need to be on the Auckland Council Producer Statement Register with evidence of insurance.
- For smaller projects, providing a copy of their Building Practitioner license (LBP) or architectural registration may be sufficient.
- Where the designer is a well-known expert in their field, providing a list of their past projects or a CV could be a suitable means to demonstrate that they are appropriately qualified.

Figure 10 (for reference only; identical to Figure 7)

Alternative solutions are assessed, accepted or declined at the discretion of Auckland Council. They will require information to support their use and they must show compliance with the Building Code.



6. Assessment considerations for satisfied on reasonable grounds

To be satisfied on reasonable grounds, BCAs must make a qualitative assessment that requires an informed judgment call. An objective test is capable of measurement, assessment and comparison.

This can be an Acceptable Solution, Verification Method or standard, but it is important to look at the wording in the Building Code and the principles of building science.

Judgement calls consider risk, complexity, previous knowledge of similar situations, skills and experience of persons providing the evidence and the quality of that evidence.

Figure 11: Satisfied on reasonable grounds (SORG) breakdown, table by Ministry of Business, Innovation & Employment (MBIE),” definition of satisfied on reasonable grounds” in Building performance: Guidance Document, satisfied on reasonable grounds, (July 2024);9

More information on SORG

Regardless of the nature or complexity of the alternative solution, it is important that Auckland Council can understand how compliance is achieved. With more complex alternative solution proposals, a building consent application may require a detailed written explanation (compliance path report) outlining how the requirements of each relevant Building Code clause will be satisfied.

Application checklist

- ☐ Who is providing the compliance information?
  Are they suitably qualified or experienced? Have they confirmed ‘reasonable grounds’ for compliance with the New Zealand Building Code?
- ☐ Have all relevant Building Code clauses been identified and addressed?
- ☐ Are copies of referenced documentation provided?
- ☐ Is all information provided consent specific?
  Less is more; providing irrelevant information or generic data only slows down the assessment process, leading to unnecessary costs and possible confusion.
- ☐ What onsite inspection and testing can be provided to demonstrate the alternative solution is built as per the consent? How can you demonstrate what is installed is performing?

There may be a requirement for site observations (by a third party) and/or site testing to verify installation and confirmation that the alternative solution performs as designed.

You must detail all on-site observations and testing, whether conducted directly or on your behalf, to verify that the work complies with the approved building consent. The frequency and extent of monitoring should be established during the building consent assessment, and where necessary, the council will document the results in the schedule of inspections and advice notes. It's important to note that third-party site observations or testing are not a substitute for council inspections.

A risk-based approach will be used to decide if a third-party review will need to be completed on the proposal. If this happens, we will discuss this with you or your representative beforehand. The applicant is responsible for all costs associated with engaging a third party.

Product appraisals

Appraisals can be useful methods of demonstrating compliance with the Building Code. They should be written by suitably qualified and experienced organisations, or individuals. Evidence of their qualification and or experience should be available on request, as a product appraisal is essentially a professional opinion outlining a product or system's ability to achieve compliance with relevant clauses of the Building Code.

Following MBIE guidance for reasonable grounds (see Figure 7), the council will use professional judgment to assess the risk, complexity, and relevant experience of the organisations providing evidence to determine if the threshold for reasonable grounds has been met.

Only those Building Code clauses noted in the appraisal will be considered. Any clauses not covered by the appraisal will, if relevant, need to be addressed by way of a separate written explanation.

Any manual or installation documentation referred to in any appraisal must be provided in support of the building consent application.

Previously issued determinations

Determinations are official decisions made by MBIE regarding compliance with the New Zealand Building Code. These determinations provide authoritative interpretations and rulings on specific building issues.

The outcome of 'previous determinations' may be used in support of an application, but as determinations are site specific, acceptance in one case will not automatically mean acceptance in all applications.

The applicant/designer will need to explain the link between the determination and the work they are proposing. They will need to outline how the previously issued determination supports that the alternative solution they are proposing will also achieve compliance with the Building Code.

Expert opinion

You can engage a subject matter expert to explain how a solution complies with the Building Code. The expert may support their opinion with recognised literature, or their expertise alone may be used to add credibility to your compliance path. Expert analysis may be used to interpret testing results and determine compliance.

Opinions should come from competent and /or suitably qualified/experienced organisations or individuals. We recommend providing their background and qualifications unless they are listed on Auckland Council's producer statement author register.

In most cases, greater weight will be given to opinions provided by individuals independent of the project or product.

Producer statements

A producer statement is a professional opinion based on sound judgment and specialist expertise. While widely used, they have no status under the Building Act 2004. They are one source of information which Auckland Council may rely on to determine if there are reasonable grounds to conclude the design/work complies with the Building Code.

Auckland Council maintains a producer statement author register of recognised professionals who have been approved to work in their nominated fields of expertise. This streamlines the process and avoids the delay of assessing the credentials of an author each time a producer statement is provided. More information on the register.

Not all alternative solutions will require a producer statement, however where provided they will be considered in accordance with the Auckland Council AC2301 Producer Statement Policy.

Testing

Tests outside those referenced within a verification method can be considered as part of a compliance path, but the test method itself must be proven as an appropriate way of demonstrating the performance requirements of the Building Code will likely be achieved.

It may be appropriate to demonstrate compliance by completing a comparative analysis between an uncited testing standard and the equivalent standards within the compliance documents to identify similarities and differences in testing protocols, performance criteria, and acceptance criteria to show that the performance requirements will be satisfied (see Appendix 1 for an example).

Another approach could be to determine if the uncited testing standard provides equivalent or higher levels of safety, performance and durability compared to the cited standards requirements. This assessment may involve technical documentation, expert opinions, and analysis to support the findings.

The council may require the compliance path to be supported by an expert review or opinion from professionals familiar with the overseas testing standards and the New Zealand Building Code requirements. This expertise can provide additional validation and credibility to the compliance demonstration.

Testing must be conducted by an accredited facility approved to test according to the specified standard, whether the standard is cited or uncited by the New Zealand Building Code.

In most cases, the testing authority should be accredited by IANZ, (International Accreditation New Zealand), if possible.

If not, accredited testing authorities worldwide need to have equivalence in terms of accreditation standards and recognition to be comparable to IANZ.

To ensure this equivalence, they should adhere to at a minimum the following criteria:

1. ISO/IEC 17025 compliance: Testing authorities should be accredited to ISO/IEC 17025, the international standard for testing and calibration laboratories, which IANZ uses as a basis for accreditation.
2. Mutual Recognition Arrangements (MRAs): The testing authority should be part of a recognised MRA, such as those established by the International Laboratory Accreditation Cooperation (ILAC) or the Asia Pacific Accreditation Cooperation (APAC). These agreements ensure that accredited test results are recognised internationally, providing equivalence across different accreditation bodies.

Other criteria will be considered on a case-by-case basis, if possible as part of a pre-application meeting to consider the level of appropriateness.

Testing results shall be provided at the consent stage to establish reasonable grounds and show that a proposed solution is likely to meet the requirements of Building Code.

Note: Legislation does not allow this to be delayed until onsite. There are no provisions to allow reasonable grounds to be demonstrated solely onsite through advice notes or onsite testing. Reasonable grounds must always be established before a building consent is granted.

Onsite testing can be used during construction to verify that manufacturing and or installation is correct, and the work is completed in accordance with the building consent.

Comparisons

It is possible to establish a compliance path by comparing an alternative solution with an acceptable solution or verification method. This works well for solutions with only minor changes from the acceptable solution or verification method. In these cases, results can be compared against the requirements in the cited compliance documents. Alternative solutions will be accepted if it is agreed that the solution has an equivalent or higher level of safety, performance, and durability compared to the compliance document requirements.

When comparing against an acceptable solution and/or verification method please be mindful that acceptable solutions achieve compliance with the minimum performance requirements of the Building Code only. Acceptable solutions often have limits to their scope such as E2/AS1 which is limited to buildings up to 10m in height. It may or may not be appropriate to apply the details contained within this document to larger scale projects.

The council will only raise requests for further information or refuse applications when it is not satisfied that the minimum requirements of the Building Code are achieved. Wherever possible, designers are encouraged to produce robust designs to a high standard.

Comparing a product or system to a previously approved consent is possible. However, consents are processed and issued on a case-by-case basis. Acceptance in one building consent does not automatically mean acceptance in another. The justification and evidence used to support a previously approved alternative solution may still be required in any subsequent applications.

Trade literature/data sheets

When trade literature and data sheets are used to support compliance of an alternative solution, they must address compliance with the New Zealand Building Code.

Literature developed for an overseas market may not be appropriate, and the designer or New Zealand supplier may be better placed to provide specific New Zealand information such as a Building Product Information Sheet.

For example:

- Literature may state that a product complies with a standard, however, the designer must link that standard to compliance with the New Zealand Building Code. This may be straightforward if the literature discusses a cited standard, but if the standard is not cited in a New Zealand compliance document then you must establish a link to the New Zealand Building Code requirements.
- Ensure information is specific and supported with evidence. Product literature may contain statements like ‘our product complies with the NZ Building Code’. This is only

a statement and will not be accepted as the sole means of demonstrating compliance. In accordance with the requirements of the Building Act s.14, we will look to the designer and/or manufacturer/supplier to demonstrate how the product complies with the Building Code.

In-service history of performance

Past projects can be used to demonstrate a history of performance. This can be straightforward, or it may require independent verification.

For example:

If a product requires a 15-year durability but has only been in use for the last two years, can this short timeframe convincingly show it will perform well for the remaining 13 years?

Performance data can also be used, and this can include data collected from regular inspections or condition assessments conducted after a product achieved its minimum durability requirements. Such data provides objective evidence that the building element has met performance criteria, such as weathertightness and durability.

For example:

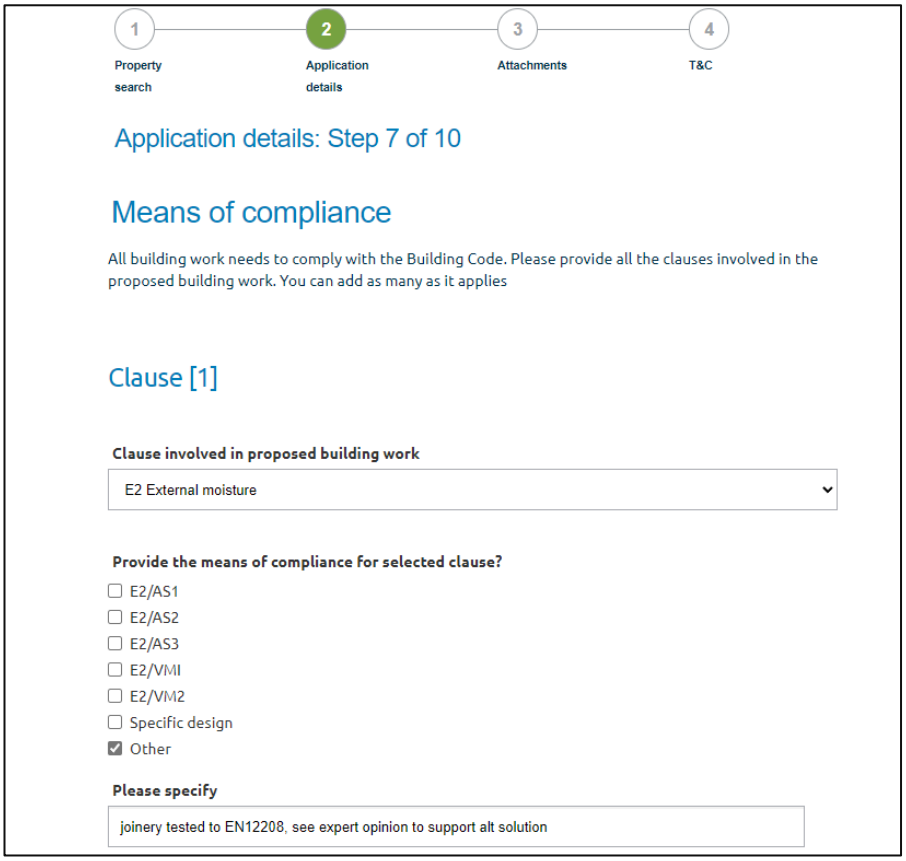
The Building Code is performance-based. This means that you must demonstrate that the product you're using for cladding is weathertight, that it keeps water out of the building.

Case studies and reports that document real-world performance are valuable additions to a building consent application, however, these need to consider the similarities and differences between projects. They should also include a documented history of performance.

When presenting an alternative solution to the council, we may ask the designer to provide information to confirm that they are suitably qualified/experienced to provide such a solution.

How to present an alternative solution

Alternative solutions are required to be identified on the online building consent application form. Please take care completing this particularly where the alternative solutions are unique. Highlighting that compliance path will allow council to process your application more efficiently.



Other than the requirement to identify an alternative solution on the application form there is no set format to demonstrate how an alternative solution complies with the building code.

It could be:

- a simple explanation of how a solution and/or design element complies with the Building Code.
- a simple, single document, or for more complex designs be a more in-depth explanation.

The size and amount of evidence will depend on the complexity of your proposal.

Your explanation must be structured so that information can be easily located, read and interpreted. There are examples of demonstrating compliance in Appendices 1, 2 and 3. There are also useful case studies on the Building Performance website.

Co-ordination statement

We recommend that the designer provides a coordination statement for the alternative solution if more than one discipline is involved, e.g. a fire engineer and a structural engineer.

When multiple disciplines are involved in the design of an alternative solution it is important that they work in co-ordination, and this is subsequently evidenced in a written explanation. This will ensure that everyone's role and responsibilities are clearly explained.

For more complex alternative solutions, it may be prudent that the specialist for each discipline signs one set of plans/details to confirm that their work has been correctly transposed onto the application plans.

Pre-application meetings

If you are considering an alternative solution and would like to discuss it, Auckland Council can arrange pre-application meetings. Experience shows that early engagement helps streamline the consenting process.

Book a pre-application meeting

SECTION THREE: Supporting documents

Product literature vs. compliance evidence

There is a critical difference between product literature and compliance evidence.

While manufacturers' guarantees and warranties, sales brochures, statements and building products information sheets have a role to play, they are not always relevant to compliance with the New Zealand Building Code.

When preparing a building consent application, it is important you read and understand the documents submitted and their purpose. This helps ensure that all necessary evidence is presented for building consent and compliance.

When provided as standalone documents, the following do not demonstrate compliance with the New Zealand Building Code.

Product technical statements

A Product Technical Statement is a summary, issued by the supplier or manufacturer, outlining evidence available to demonstrate compliance with their product or system.

These statements can be useful because they act like an index by correlating all the information relating to that product in one place. However, without further supporting documentation, they do not demonstrate compliance with the Building Code.

Guarantees and warranties

A guarantee or warranty is a contractual assurance provided by a builder, manufacturer, or supplier regarding the quality, performance, or durability of materials, workmanship, or products used in construction. While it is good for an owner, a guarantee or warranty is not evidence that the work will comply, it is not accepted as a means of demonstrating compliance.

Manufacturers/suppliers statements

Often, a manufacturer or supplier will provide a statement to the effect that their product complies, or will comply, with a nominated standard(s) once constructed.

While it may be reassuring to the design team, this kind of statement is not a substitute for evidence. It does not have the same strength as independent assessment or performance

testing. The council must be satisfied on reasonable grounds at the time of granting the building consent. Manufacturer's statement alone will not be relied upon to meet the threshold for reasonable grounds.

Building products information sheets

The Building Amendment Act 2021 introduced new minimum information requirements for building products manufactured or imported into New Zealand. See Building (Product Information Requirements) Regulations 2022 for more information.

Manufacturers may present this information as a Building Product Information Sheet, enabling the purchaser to ascertain at face value if the product or system demonstrates compliance to the Building Code. However, without further supporting documentation they do not meet the threshold of reasonable grounds required by s.49 of the Building Act.

SECTION FOUR: Onsite

Establishing onsite compliance

As part of proposing an alternative solution, it is important you consider what expertise will be required to ensure work is installed in accordance with the approved plans.

Producer statements (PS) from a council-approved expert, registered with us provides evidence that design or building work complies, or will comply, with the Building Code and helps us make a decision on issuing a building consent

Specialist installers may be required, and you may also need to allow for inspections and testing regime, to be undertaken by others, such as the designer or whoever issued the PS1 or PS2. This will have likely been discussed and agreed with Council prior to issuing the consent.

The frequency and extent of monitoring will have been established during the building consent assessment stage, and where necessary, the council will have documented these in the schedule of inspections and advice notes.

Inspection requirements

As stated above, alternative solutions may require specialist site inspections, observations and/or testing. These should have been noted in the building consent application. Construction monitoring can be recorded in accordance with Engineering New Zealand Guidelines.

There are multiple ways for you to record onsite inspection requirements:

- the producer statement author will record their onsite inspection requirements on their AC2326 producer statement.
- for larger projects, it may be appropriate for the designer to provide a draft inspection regime as part of their compliance path report.

Documentation requirements will be captured on the AC1174 Schedule of inspections which is issued with each building consent.

The inspection regime may be a mix of council and specialist inspections. We will often require specialist inspections to be accompanied by a PS4. Note that specialist inspections are done to support, not replace, the council inspection process.

Testing requirements

To verify that building work has been completed in accordance with the approved building consent, the designer and/or council may specify that testing be completed onsite.

It is important to plan your testing regime, so you undertake the appropriate testing at the appropriate time.

> For example:
>
> A deck membrane is installed early in the construction process, months before all the building work is complete. This raises the possibility that the membrane could be damaged post-installation. It would be more appropriate to test the membrane once the works on and around it are complete?

Quality management systems

In some instances, the designer and/or council may require a site quality management plan. If so, it is important that people on-site are aware of this and understand what is required.

Minor variations and amendments

All building work must be done in accordance with the approved building consent.

We acknowledged that work doesn't always go to plan onsite, and changes are inevitable. Any changes to the approved building consent must be recorded and approved by the council prior to the building work being done. These changes can be managed via a minor variation or an amendment to the approved building consent.

When a building consent is altered, the proposed revised work, when applicable, will also need to be supported, by any producer statement author(s) who provided input into the original design. The proposed revised work, therefore must be accompanied by an updated PS1 producer statement design, and/or a PS2 design review, from the original producer statement author.

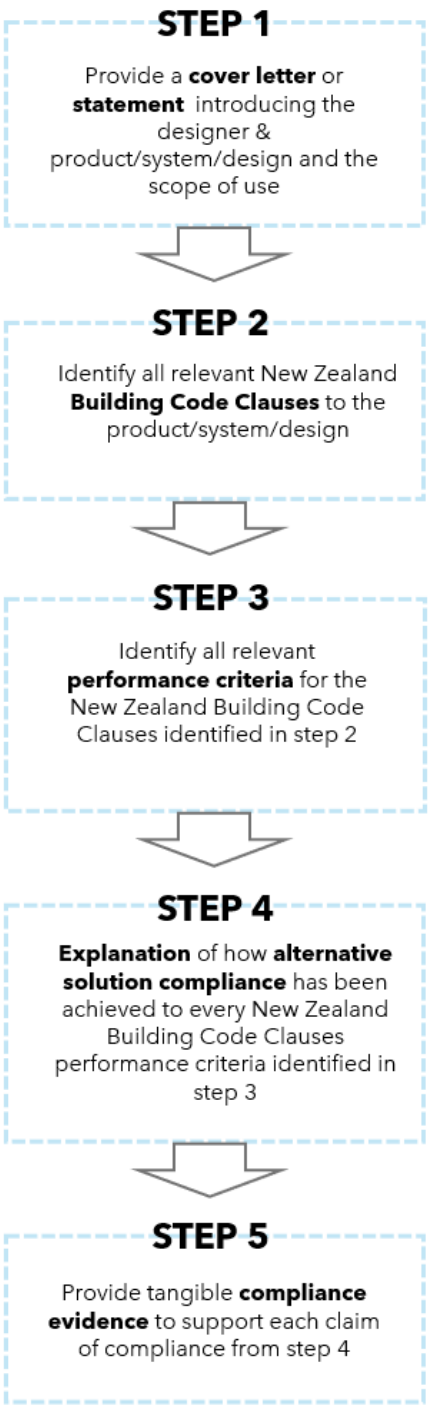
The acceptance or otherwise of a minor variation is solely at the council inspector's discretion. See AC2224 Amendments and Minor Variations.

Note: an amendment is used to record a change to something previously consented. If you need to expand the scope of the work, you must apply for a new building consent, for that work outside what has already received a building consent.

SECTION FIVE: Appendices

Appendix 1. Step-by-step guide

This flowchart suggests the steps needed to demonstrate compliance to the New Zealand Building Code for an alternative solution.



Appendix 2. Example

Alternative solution compliance for flooring product
Product: Laminate timber flooring. Made up of 4 layers – hardwood base, layered plywood centre, veneer timber and clear protective overlay.
Project address:

NZBC Building Code clause & performance criteria	Design Coordinator's Explanation of Compliance	Evidence link to NZBC	Compliance evidence	Attachments
B2 Durability **B2.3.1** (c) **5** years if: (i) the *building elements* (including services, linings, renewable protective coatings, and *fixtures*) are **easy to access and replace**, and (ii) failure of those *building elements* to comply with the *building code* would be **easily detected during normal use** of the *building*.	The laminate flooring will be applied in areas that are **easy to access and replace**; any failure will be **easy to detect.** Therefore, a **5-year** durability period is sufficient. The results above consider abrasion, and exposure to moisture and indicate that the material will last longer than the 5-year minimum required for durability. For the flooring to achieve the minimum 5-year durability, the manufacturer has set out their normal maintenance requirements in their technical literature. Independent testing against AS/NZS 2924.5:2024 has been carried out. The testing classifies the sample used as ISO 10874 classification 23- meaning it is: - suitable for heavy domestic use; - suitable for areas with intense use such as living rooms, entrance halls, and achieves an abrasion class of AC3.	No verification method or test method cited by NZBC. However, AS/NZS 2924.5 2024 provides ISO 4586-2:2018 as a test method for resistance to moisture.	AS/NZS 2924.5:2024 High-pressure decorative laminates Part 5: Classification and specifications for flooring grade laminates less than 2 mm thick	**Appendix B** AS/NZS 2924.5:2024 Test Summary Manufactures Care & Maintenance Instructions

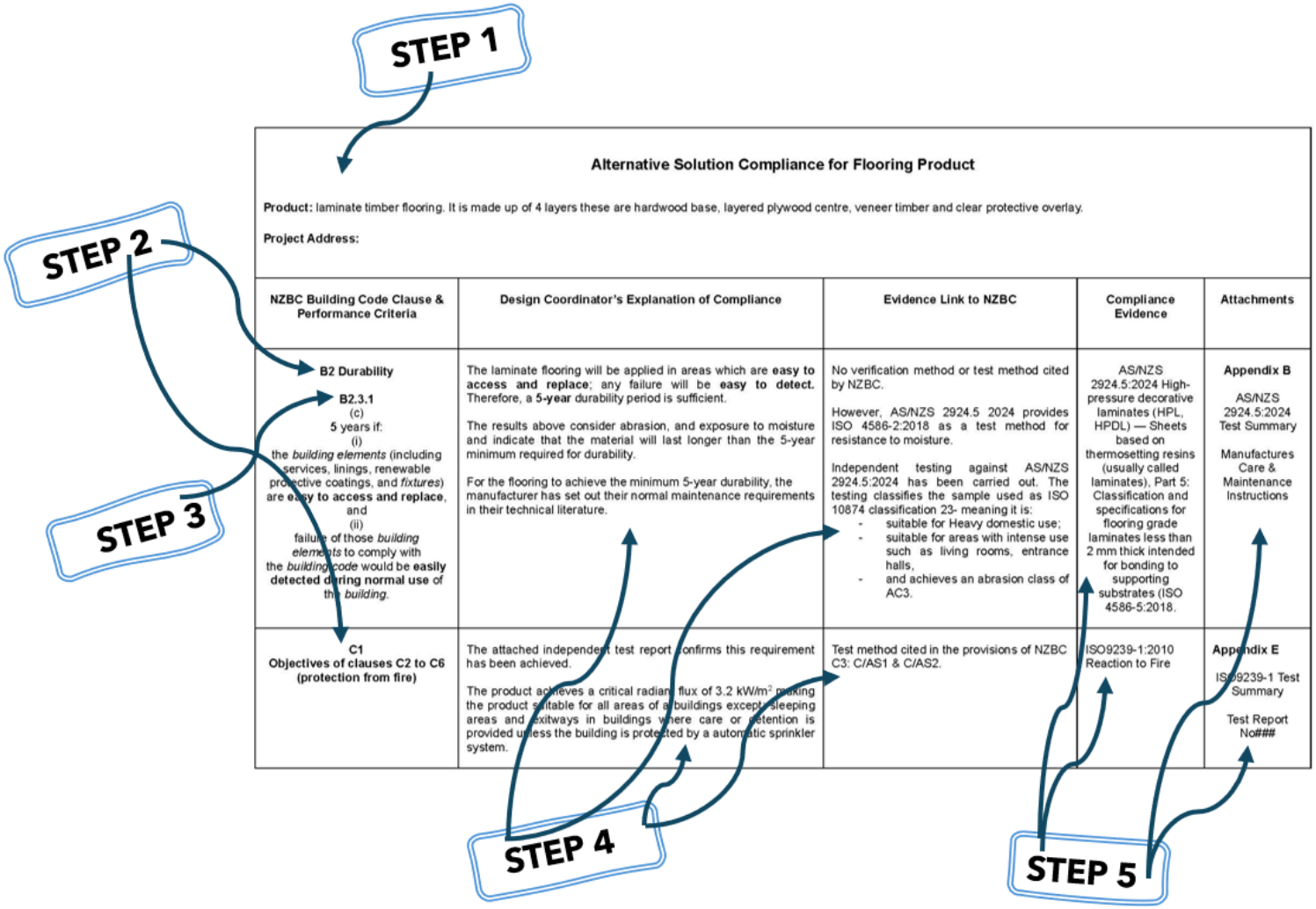
C1 **Objectives of clauses C2 to C6 (protection from fire)**	The attached independent test report confirms this requirement has been achieved. The product achieves a critical radiant flux of 3.2 kW/m^2 making the product suitable for all areas of a buildings except: sleeping areas and exit ways in buildings where care or detention is provided unless the building is protected by a automatic sprinkler system.	Test method cited in the provisions of NZBC C3: C/AS1 & C/AS2.	ISO9239-1:2010 Reaction to Fire	**Appendix E** ISO9239-1 Test Summary Test Report No###
D1 Access routes **D1.3.3** (d) have *adequate* **slip-resistant** walking surfaces under all conditions of normal use	AS4586 test is nominated in the acceptable solution clause D1/AS1 clause 2.1.2. - D1/AS1 states the internal access routes of housing, including kitchens and bathrooms, shall be assumed to be dry in normal use. OR - **Slip resistance** results of our flooring product indicate the specimen is suitable for areas exposed to wetting or dry in normal use OR D1/AS1 states this requirement applies only to the access route on the approach to the main entrance.	Test method cited in D1/AS1 (Amd 6) (Second edition, amendment 6)	AS4586:2013 Slip Resistance report	**Appendix F** Test Report No###

E3 Internal Moisture **E3.3.3** Floor surfaces of any space containing *sanitary fixtures* or *sanitary appliances* must be ***impervious*** and **easily cleaned.** **E3.3.5** Surfaces of *building elements* likely to be splashed or become contaminated in the course of the *intended use* of the building, must be ***impervious*** and ***easily cleaned.***	**Impervious** Three boards are assembled, and a 100mm diameter plastic cylinder is sealed to Joint. The plastic cylinder contained drops of coloured dye which are left for 24 hours. The cylinder is removed and the joint disassembled. This showed no moisture passed through the board demonstrating surface of the boards (the laminate, the board joints and the board itself) is impervious **Easily cleaned** The top surface wear layer is melamine, a hard-wearing thermosetting plastic. Once cooled and hardened, these plastics retain their shapes and cannot return to their original form. The surface is impervious and so can be easily cleaned with a moistened cloth or sponge, or very dirty surfaces requiring a little water and gentle cleaning agent.	No verification method or test method cited by NZBC. ISO4760:2022 Topical moisture resistance- Assembled joint. This test is designed by the ISO as a criterion for rating the performance of laminate flooring exposed to moisture. A pass indicates the specimen achieves the performance requirement of E3.3.3 and E3.3.5 impervious Our flooring has been Independently tested by XXXX. Who are accredited to undertake testing to internationally recognised standards, including ISO 4760:2022.	ISO 4760:2022 Topical moisture resistance- Assembled joint	**Appendix A** ISO 4760:2022 Results Manufactures Care & Maintenance Instructions
F2 Hazardous building materials **F2.3.1** The quantities of gas, liquid, radiation or solid particles emitted by materials used in the *construction* of *buildings*, shall not give rise to **harmful concentrations at the surface of the material** where the material is exposed, or in the atmosphere of any space.	The emission of VOC including formaldehyde from this product is negligible and 10 times lower than the EU standards. Therefore, the product will achieve the performance requirements of F2.3.1 and not give rise to harmful concentrations of gas, liquid, solid particles or radiation.	No verification method or test method is cited by NZBC. **VOC test report** Independent testing from XXXX accredited facility has been carried out to demonstrate an E1 compliance - Classified in the lowest category for formaldehyde emission per EM717-1 (Release ≤ 0.124 mg/m3 air, or ≤ 0.038 ppm). - WorkSafe NZ requirement is Max. ≤ 0.3 ppm.	EN717-1 VOC Emission Standard: Wood-based Panels – Determination of Formaldehyde Release – Formaldehyde emission by the chamber method	**Appendix C** **- VOC test report**

G6 Airborne and impact sound G6 3.1 The *Sound Transmission Class* of walls, floors and ceilings, shall be no less than 55. Sound Transmission no less than 55 G6 3.2 The *Impact Insulation Class* of floors shall be no less than 55.	Sound Insulation is nominated in the NZBC clause G6 and requires an STC and IIS rating of no less than 55. We have independently tested to demonstrate that Sound Transmission Class and Impact Insulation Class shall be no less than 55 through ISO140-7 testing. In the certificate attached we have an L'nT value of 42 and IIC value of 68, added = 110. Divided by 2 = 55 so meets NZBC requirement.	Test method cited in G6/VM1 (Amd 2) (First Edition, Amendment 2) ISO140-VII Certification	ISO140-7 Sound Transmission and Insulation standard: Acoustics — Rating of sound insulation in buildings and of building elements	**Appendix D**
Signed by: Design Coordinator **Qualification** (if applicable) **Date:**				

Appendix 3. Annotated example

This example from Appendix 2 is marked up with the recommended steps from Appendix 1. For clarity and simplicity, this is only part of the example from Appendix 2.



Alternative Solution Compliance for Flooring Product

Product: laminate timber flooring. It is made up of 4 layers these are hardwood base, layered plywood centre, veneer timber and clear protective overlay.

Project Address:

NZBC Building Code Clause & Performance Criteria	Design Coordinator's Explanation of Compliance	Evidence Link to NZBC	Compliance Evidence	Attachments
B2 Durability **B2.3.1** (c) 5 years if: (i) the *building elements* (including services, linings, renewable protective coatings, and *fixtures*) are **easy to access and replace**, and (ii) failure of those *building elements* to comply with the *building code* would be **easily detected during normal use** of the *building*.	The laminate flooring will be applied in areas which are **easy to access and replace**; any failure will be **easy to detect.** Therefore, a **5-year** durability period is sufficient. The results above consider abrasion, and exposure to moisture and indicate that the material will last longer than the 5-year minimum required for durability. For the flooring to achieve the minimum 5-year durability, the manufacturer has set out their normal maintenance requirements in their technical literature.	No verification method or test method cited by NZBC. However, AS/NZS 2924.5 2024 provides ISO 4586-2:2018 as a test method for resistance to moisture. Independent testing against AS/NZS 2924.5:2024 has been carried out. The testing classifies the sample used as ISO 10874 classification 23- meaning it is: - suitable for Heavy domestic use; - suitable for areas with intense use such as living rooms, entrance halls, - and achieves an abrasion class of AC3.	AS/NZS 2924.5:2024 High-pressure decorative laminates (HPL, HPDL) — Sheets based on thermosetting resins (usually called laminates), Part 5: Classification and specifications for flooring grade laminates less than 2 mm thick intended for bonding to supporting substrates (ISO 4586-5:2018.	**Appendix B** AS/NZS 2924.5:2024 Test Summary Manufactures Care & Maintenance Instructions
C1 **Objectives of clauses C2 to C6 (protection from fire)**	The attached independent test report confirms this requirement has been achieved. The product achieves a critical radiant flux of 3.2 kW/m^2 making the product suitable for all areas of all buildings except sleeping areas and exitways in buildings where care or detention is provided unless the building is protected by a automatic sprinkler system.	Test method cited in the provisions of NZBC C3: C/AS1 & C/AS2.	ISO9239-1:2010 Reaction to Fire	**Appendix E** ISO9239-1 Test Summary Test Report No###

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