window & glass association nz

Technical Bulletin

WG 45120.01:2025

Assessing Compliance Framework

Introduction

There are many facets to the gem that is building compliance, especially when you look to consider the compliance of a specific product, and even more so when you look at windows and doors. The intent of this bulletin is to establish a framework for the assessment of windows and doors, that aides in the decision as to whether they are "compliant".

This bulletin focuses on windows, doors, and glazing used for housing only.

Standards vs Codes

NZS 4211:2008 and the subsequent TS 4211:2022 are the go to standards in Aotearoa New Zealand for the performance and classification of windows and doors. The standard not only tests the structural integrity, watertightness, and air permeability but also the function of a window or door. A "4211" test report is held up as evidence of the quality and robustness of a product.

For glass and glazing the same is true of NZS 4223 Parts 1-4. These standards set benchmark for structurally sound, durable, and most importantly safety against human impact.

A legal requirement to comply with the Building Code is not necessarily a requirement to comply with one of these standards. A performance classification, or compliance with any of these standards, in turn, does not necessarily mean compliance with the Building Code! Yes, the Code refers to these standards, but there is much more to compliance than waving a test report and claiming to have satisfied NZBC provisions.

The focus of this bulletin is on a framework to establish compliance with the provisions of the Building Code.

Section 17 of the Building Act 2004 says,

> "All building work must comply with Building Code"
> All building work must comply with the Building Code to the extent required by this Act, whether or not a building consent is required in respect of that building work."

But what does compliance mean when referring to windows and doors? In summary of the above, it means demonstrating, or providing evidence, that the product complies with the *applicable*

provisions of the Building Code, showing it is suitable for use within the building and the site the building is being constructed on.
Therefore, window and door compliance is split into two separate categories, product performance and site suitability. We will look at these below separately, as **Product** and **Project**.

Product

This **Product** category refers to windows and doors marketed by manufacturers, importers, wholesalers, retailers, and/or distributors, and covers the information provided by the business that architects, designers, specifiers, consumers and/or councils might access to understand if the products are suited to their projects.
Compliance here refers to ensuring adequate and accurate information is transparently provided to support any performance or classification/ratings claims made against the product.

The Association considers the following items should be checked when assessing a company's product for your project.

- Is the business a Window & Glass Association member?
  It is a requirement of membership to the Association that all products comply with the Building Code.
- Building Product Information Requirements (BPIR)
  It is a legal requirement that all manufacturers, importers, wholesalers, retailers, and distributors based in New Zealand must produce the required building product information and provide it *online for free*, at the time the product is for sale. Among other things the BPIR statement *must specify*,
  - the clauses of the Building Code that are relevant to the product, within its intended scope of use,
  - how the building product is expected to contribute to compliance with the relevant Building Code clauses any,
  - information on the limitations on the use of the product line from which the building product is customised, within its intended scope of use,
  - any design requirements that would support the appropriate use of any building product that will be customised from the building product line,
  - any limitations on the use of the building product,
  - any design requirements that would support the appropriate use of the building product,
  - any installation requirements,
  - any maintenance requirements.

- Do the advertised products have a performance classification/rating? If so, to which standards are these ratings based?
- If testing to standards other than those referred to in the Building Code, the testing shall confirm, as a minimum, ratings for structural performance, water penetration, and air permeability.
- Does the supporting documentation accurately represent the product being marketed?
- Are the performance classification/ratings suited to the area the business is located in? I.e. is a business in Wellington supplying product only rated to a medium wind zone?
- Most test standards have extrapolation limits. Is the product being supplied fit within the allowable limits of the test specimen?
  I.e. a 1.2m x 1.2m unit tested in accordance TS 4211:2022 cannot be used to demonstrate compliance for any unit larger than 1.32m x 1.32m.
- Are the products being marketed supported by a CodeMark, BRANZ Appraisal, an engineer's letter of endorsement, or another recognised certification scheme?
  If so, a scope of use and/or limitations will form a basis for the certification, typically stating,
  - standards tested to,
  - wind zone,
  - size limitations,
  - other limitations/restrictions on use,
  - recommended installation methods.
- Do all products have the same performance classification/rating? If so, this would be unusual.
- Are all products represented?
- Is the supporting documentation (test reports) available and how is it accessed?
- Is the supporting documentation (test reports) available for all advertised products?
- Are installation details and/or instructions/recommendations available?
- Where was the product tested? Was the laboratory accredited and third party audited? If so, the reports will have registration/identification/certification numbers.
- Can the credibility of the supporting documentation be verified?

Product Information

Product performance information regarding Code compliance must be made freely available online by all manufacturers, importers, wholesalers, retailers, and distributors. If it is not, it is the Association's recommendation that you consider another window and door product. If you are not satisfied with the level of support at the time of selection, it is likely you'll be more dissatisfied at the end of the project.

Project

This section of the bulletin covers what we're referring to as the **Project** category which refers to the suitability of the selected products for the building and site on which they're being used. Many of the points raised below should be addressed at the time of consent but given the building industries predilection toward product substitution (which post consent should require at least a minor variation) secondary checks should be performed before installation and again during the inspection process.
Windows and doors when used within their scope of limitations must be appropriately classified/rated for buildings designated wind zone. Compliance here is measured against the applicable clauses of the Building Code, specifically as listed below. Compliance with a standard does not necessarily assert compliance with the Code.

B1 - Structure

The function of clause B1 is to ensure buildings and building elements withstand the loads they're like to experience in their lifetime, and to safeguard people from injury, loss of amenity, and to protect other property from physical damage, through structural failure.
In TS 4211:2022 this is assessed in the *'Deflection of structural members'* and *'Ultimate strength'* tests.

E2 - External Moisture

The function of clause E2 is to ensure buildings are constructed to provide adequate resistance to penetration by, and the accumulation of, moisture from the outside to safeguard people from illness or injury that could result from external moisture entering the building.
In TS 4211:2022 this is assessed in the *'Water penetration - Static'* test.
Whilst *'Air permeability'* is not a requirement of the Building Code, the test in TS 4211:2022 can provide an understanding of expected water penetration performance and is therefore worthy of assessment.

H1 - Energy Efficiency

The function of clause H1 is to ensure buildings are constructed to achieve an adequate degree of energy efficiency when that energy is used for modifying temperature, modifying humidity, providing ventilation, or doing all or any of those things.
There is no New Zealand test standard for the thermal performance of windows and doors, instead compliance is demonstrated through calculation or modelling.

For glazing there are a couple of additional Code clauses that need to be considered. Again, compliance with a standard does not necessarily assert compliance with the Code.

B2 - Durability

The function of clause B2 is to ensure that a building will, throughout its life, continue to satisfy the other objectives of the Building Code. Materials, components, and construction methods shall be sufficiently durable to ensure that the building, without reconstruction or major renovation, satisfies the other functional requirements of this code throughout the life of the building.
As a demonstration of durability, B1/AS1 refers to and modifies NZS 4223.2:2016, which includes a strict set of test requirements for manufacturers of Insulating Glass Units (IGUs).

F2 - Hazardous Building Materials

The function of clause F2 is to safeguard people from injury and illness caused by exposure to hazardous building materials, such as glass. The clause requires that where people are likely to come into contact with glass it shall, if broken on impact, break in a way which is unlikely to cause injury, or resist a reasonably foreseeable impact without breaking, or be protected from impact.
Sub-section 4.4.1.4 c) of the Building Product Specification (BPS) refers to and modifies NZS 4223.3:2016, to ensure glazing complies with human impact safety requirements - specifically including structural balustrades.

The Association considers the following items should be checked when assessing products as being suitable for your building site.

- Which compliance path is being sought? An Acceptable Solution or an Alternative Solution supported by a Verification Method or other documentation.
- The ratings/classifications for each of the windows and doors must satisfy all facets of Code required performance, must meet or exceed the buildings designated wind zone.
- All windows and doors should be labelled with a rating or classification.
  - at a minimum these labels should include the standard to which they've been tested to,
  - the wind zone to which they've been rated/classified,
  - the air permeability classification.

  Where labelling is not provided on the product, it must be supported by appropriate test reports and/or documentation providing evidence of the purported ratings, upon request.
- Are windows and doors being used within their scope of limitations?
  Is the supporting documentation applicable to the size and configuration of each of the units being used in the project?
- Test report analysis. Do the test reports provided,
  - match the product selected for the project. Check customer name, brand, product description, and registration/identification/certification numbers,
  - appropriately dated and signed,
  - correct test identification,
  - are the reports complete, with drawings, as opposed to a summary,

- include tests for structure, water penetration, air permeability,
- expected deflection ratios for the depth of the members tested,
- a clear path through the test sequence, especially if failures were observed,
- note the drainage details of the test specimen, including modifications made during testing,
- identify the location of any failures experienced,
- a clear product rating based on the lowest performing test component.

- Thermal performance of windows and doors is based on their contribution as a houselot of joinery to the performance of the thermal envelope, thus the construction R-value of all units, based on their product type, materials, combinations, size, and configuration. Performance ratings for individual fixed dimension units are informational only and cannot be used to demonstrate compliance.
- Thermal performance for the houselot of windows and doors is provided in one of two ways,
  - a WEERS report, or
  - a Statement of Thermal Performance.

  Both are provided by the manufacturer or supplier of the windows and doors and are specific to the project.

- Glazing must be suitable for the location in which it is being used, including, but not limited to the use of appropriately selected safety glass in accordance with clause F2 and NZS 4223.3:2016.
- All safety glazing must be permanently marked in accordance with the BPS and NZS 4223.3:2016 and be supported by appropriate test reports and/or documentation.