

A Code to build by

The New Zealand Building Code was one of the first performance-based building codes in the world. Unusually, it includes explicit performance criteria for durability that all building elements must comply with.

BY NIKKI BUCKETT, ADVISOR - BUILDING SCIENCE, MINISTRY OF BUSINESS, INNOVATION AND EMPLOYMENT



NEW ZEALAND'S performance-based Building Code applies to all new buildings, as well as all alterations and renovations to existing buildings. It allows flexibility and encourages innovation by specifying the functional requirements and performance criteria for building work as opposed to prescribing how a building is to be built.

This Building Code came into force in 1992 after the passing of the Building Act 1991, which required the Code to address the wellbeing, sustainable development and safety and health of building users. These requirements remained when the Building Act 1991 was repealed and replaced with the Building Act 2004, which added further controls including practitioner licensing and accreditation of consent authorities.

Modelled on the Norwegian Code

Our performance-based Building Code was loosely derived from the Norwegian model and was New Zealand's first countrywide Building Code. Before this, both central government and municipal authorities enforced building control legislation.

By 1979, there were over 60 Acts plus a myriad of specific local bylaws related to building administered by more than 19 central government departments, over 300 municipal authorities and a variety of other organisations, such as the New Zealand Fire Service.

A national building code

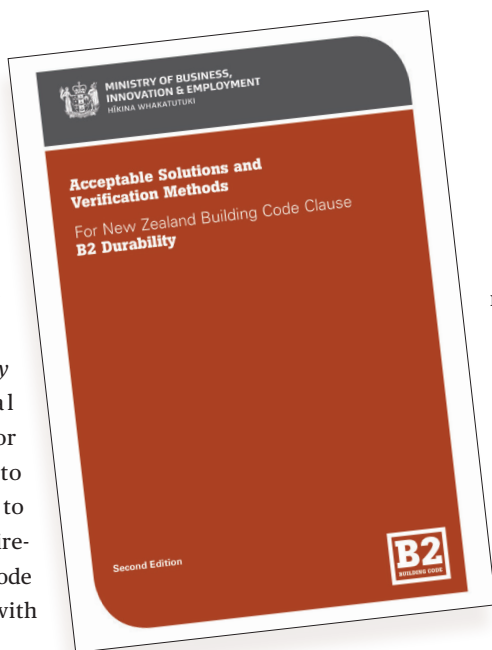
Because the industry wanted a coherent, national building control regime, the Building Industry Commission was set up in 1986 to determine appropriate legal and regulatory provisions for building construction and maintenance across New Zealand.

In 1990, the Commission produced a report, *Reform of Building Controls*, which recommended a new national performance-based building regulation system, designed in accordance with the Nordic model. This was brought together under a single Act - the 1991 Building Act.

In 1991, the Building Act was passed, and the New Zealand Building Code took effect in 1992. The Building Industry Authority was established under the Act as the central government monitoring agency. Municipal authorities carried out building control functions under the Act.

Durability makes it different

The New Zealand Building Code differs from the building codes of most other countries ➤



by having explicit performance criteria for durability.

Clause B2 *Durability* requires structural elements - supports for walls, floors, roofs - to continue conforming to the performance requirements of the Building Code for at least 50 years with normal maintenance.

Elements that are moderately difficult to access and replace, for example, plumbing in subfloors or cladding, have a minimum durability requirement of 15 years with normal maintenance. Easily accessible elements, such as surface coatings, linings and services, have a minimum durability requirement of 5 years with normal maintenance.

This means that building product manufacturers or importers of materials must provide evidence that their products will meet or exceed these durability requirements in service, or specifiers and consenting authorities will be reluctant to specify or approve them for use.

It is particularly important to check that imported products will perform in New Zealand's climate and forms of construction.

Advantages of performance-based

Building Code clauses and standards referenced are amended and updated over time as political drivers, societal expectations and construction technology change.

Before any change to legislative documents, Acceptable Solutions or Verification Methods are made, an assessment of costs and benefits is carried out to ensure that the outcome of the change is likely to have a positive benefit for New Zealand.

The performance-based nature of the Code enables new and innovative technology to be incorporated as it becomes readily available through Alternative Methods and

updates to Acceptable Solutions.

In 2013, the Acceptable Solution for fire escape paths was changed to include photo-luminescent materials instead of just lighting solutions, and Australia has followed suit.

Changes in 2012 mean professionals are now able to use numerical modelling to demonstrate compliance through the Verification Method for fire protection (C/VM2), further encouraging innovation in design and specification.

More involved than prescriptive method

While it has taken time for Alternative Methods and Verification Methods to be taken up by the industry, many are now successfully using them as an alternative to following prescriptive standards and creating new solutions to old problems.

The slow uptake may be partly due to the more involved process that includes the need to provide reasonable evidence that the objectives of the Building Code will be met by the proposed building work.

To facilitate this, engagement with the building consent authority from early in the planning stage is important. Working together helps to clearly define what needs to be done and what documentation needs to be provided to achieve compliance. ◀

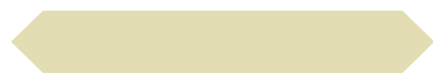
New Zealand Building Code

Performance-based

one of first Durability 5, 15 or 50 years



functional requirements innovation Acceptable Solution Verification Method



- B1 Structure
- B2 Durability
- C Protection from fire
- D1 Access routes
- E2 External moisture
- E3 Internal moisture...