

Using Volumes One and Two of the National Construction Code Series

General regulatory requirements

1. SUMMARY

under the Building Code of Australia (BCA), compliance with the relevant Performance requirement(s) must be adequately demonstrated in an application for a building permit to enable the relevant Building surveyor (RBS) to assess and determine the proposed work complies with the Building act 1993 (act) and the Building regulations 2006 (regulations) prior to issuing a building permit. Compliance can be achieved by two design paths. One is by adherence to the Deemed-to-satisfy (DTS) provisions or alternatively, a design can demonstrate compliance with the relevant Performance requirement(s) via an alternative solution.

Where an owner or building designer chooses to use an alternative solution, they should ensure that compliance with the Performance Requirements is satisfied by demonstrating the use of an assessment method or methods set out in Clause a0.9 of Volume one and Clause 1.0.9 of Volume two of the BCA and providing supporting documentation set out in Clause a 2.2 of Volume one or Clause 1.2.2 of Volume two to satisfy the RBS that a building permit can be issued.

This practice note considers design compliance and building permit approval issues relating to the performance based BCA. Part A examines

issues relating to the performance based system. Part B examines the Building appeals Board (BAB) operations.

2. PART A — PERFORMANCE BASED SYSTEM

A1. The BCA structure

a performance based approach sets a level of required outcome performance, without prescribing a particular method of meeting that outcome.

A1.1 Performance Requirements

The BCA contains Performance requirements which are the mandatory levels of compliance either through a design meeting the DTS or an alternative solution that demonstrates to the RBS that the relevant Performance requirement(s) have been satisfactorily met.

A2 Key terms

The BCA uses some key terms that alert a designer and an RBS to critical measures relating to 'environmental', 'level of risk', 'occupant behaviour and ability', 'emergency service intervention' issues and other matters that must be considered in both the design and approval of a proposed building that is intended to meet the required level of performance for that type of building.

A2.1 Use of the term 'appropriate to' some Performance

Requirements state that a particular provision must be 'appropriate to' certain matters,

meaning that these matters must be taken into consideration and accounted for when designing and approving the design against that Performance requirement.

A2.1.1 Use of the term 'to the degree necessary'

several performance requirements contain the term 'to the degree necessary', meaning that a designer must consider all the relevant information and demonstrate what the 'degree' of necessity is and that the design meets this 'degree' to the satisfaction of the RBS.

A2.2 DTS provisions

DTS provisions are set out in the BCA as an approved method of complying with the performance requirements. In relation to a DTS provision, subject to regulation 1502 and minister's Guideline MG/04, an RBS would be able to determine compliance. The RBS might also rely on another expert's judgement to determine compliance. If any designer, builder or manufacturer for any reason does not want to develop a new means of achieving the Performance requirements, they can choose to adopt the DTS provisions as a clear demonstration of compliance.

A2.3 Alternative Solutions

In instances where a DTS solution does not suit the proposed design, an alternative solution may be formulated to demonstrate compliance with the performance requirements.

A2.3.1 International Fire Engineering Guidelines

The international Fire engineering Guidelines provide a link between the regulatory system and fire engineering and provides guidance for the process of fire engineering along with methodologies and data that can be used by suitably qualified and competent practitioners (refer regulation 113).

A2.3.2 Fire Brigade Intervention Model (FBIM)
a number of Performance requirements in the fire safety-related Parts of the BCA depend to some degree on fire brigade intervention. AFAC have developed a world-first model, capable of determining the time of arrival and likely action by a fire brigade. Building designers can use the FBIM where a Performance requirement refers to something being appropriate to 'fire brigade intervention'.

A2.4 Assessment methods

Assessment methods are the means used to prove (in the case of a building owner or design agent), or to assess (in the case of the RBS), whether all or part of an application for a building permit satisfies or is likely to satisfy:

i) For an Alternative Solution:

- compliance with the relevant provisions of the Performance requirements, or
- at least equivalence with the performance achieved by all relevant DTS provisions; or

ii) Full compliance with the relevant DTS provisions.

- These could include the use of:
 - The international Fire engineering Guidelines developed by the Australian Building Codes Board (ABCB)
 - The Fire Brigade intervention model (FBIM) developed by the Australasian Fire and rescues authorities Council (AFAC). an appropriate international standard or code. The use of appropriate assessment methods must be undertaken by the designer (or person proposing the alternative solution) to establish compliance of the alternative solution with the relevant Performance requirement(s). In order to determine the Performance requirement(s) relevant to the alternative solution the designer (or person proposing the alternative solution) must;

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- a) identify the relevant DTS provision(s) of each section or part that is subject of the alternative solution; and
- b) identify the Performance requirement(s) from the same section or part relevant to the identified DTS provision; and
- c) identify Performance requirement(s) from other sections or parts that are affected by the DTS provisions that are the subject of an alternative solution.

The application for a building permit must include one or more appropriate assessment methods, to substantiate the use of that alternative solution.

One assessment method that requires some further discussion is “expert judgement”. This term is defined in the BCA as follows:
Expert Judgement means the judgement of an expert who has the qualifications and experience to determine whether a building solution complies with the Performance requirements.

There are several ways that expert judgement can be obtained, including certification and reports. These can be used for verification of either design or inspection and include (but are not exclusive to) certificates under section 238 of the act issued by experienced and registered building practitioners.

Since the introduction of the registration of building practitioners, there has been a notable shift in the way in which building surveyors obtain expert advice on the compliance of certain elements of buildings. In the area of DTS fire safety (for example fire sprinkler system design and installation), many building surveyors have sought certificates from professional engineers, rather than from the number of less qualified, but very experienced and competent certifiers who have provided this service for many years.

While some RBS might seek a certificate under section 238 of the Act to cover fire safety design, this is not a requirement of the regulations, unless the matter relates to determining compliance with an alternative solution in accordance with regulation 113.

However, building surveyors are encouraged to obtain fire safety compliance reports for their consideration and assistance in determining compliance.

In determining compliance with an alternative solution under the BCA, the RBS must first consider regulation 113, then regulation 1502 and minister’s Guideline MG/04. Then, they must be satisfied that in relation to the specific matter being considered, that person is an expert. This test must only be made after due consideration of the experience and qualifications of the person involved.

In this case (determining compliance with an alternative solution), significant years of experience might not by itself be sufficient justification to verify expertise. Building surveyors and engineers are reminded of the liability immunity provisions that a certificate under section 238 of the act offers is limited by the acceptance of the certificate by the building surveyor “in good faith”. This means that if the building surveyor should have reasonably known that the practitioner issuing the certificate was not qualified and/or experienced to do so (even though they are a registered building practitioner), then the liability immunity might not apply.

In relation to minister’s Guideline mG/04 and whether or not engineers can certify their own designs for compliance with a particular performance requirement, the RBS must consider:

- the design complexity; and
- the practitioners involved; and

- Whether it is appropriate for the engineer to certify that design, without further independent review.

A3 How to use the performance-based system

A3.1 Choose a building solution a building proposal is deemed to have complied with the BCA Performance requirement if compliance is achieved using the DTS provisions. However, a building owner (or design agent) may take another approach entirely, on the understanding that the proposal must still meet the performance requirements. The first step in preparing a building proposal for a building permit application is to choose the means of achieving compliance with the BCA. this will comprise either:

- a DTS solution.
- an alternative solution.
- a combination of DTS provisions and alternative solutions.

Note that any change from a DTS provision must be treated as an alternative solution, if this change is not:

- a) specified in the DTS provisions, or
- b) in accordance with a performance standard within the DTS provisions.

A3.2 Choose an Assessment Method it is the responsibility of a building owner (or agent) to satisfy the RBS that the building and all elements within the building satisfy the Performance requirements of the BCA. the building owner (or design agent) must make sure that the assessment method(s) adopted satisfactorily indicate that the building will achieve the requirements of the BCA.

The method chosen will largely depend on the nature of the building proposal, so that:

- a) In the case of a very simple house renovation, a set of plans which clearly indicate compliance with the DTS provisions may be all that is required.

b) in the case of a more complex proposal, an alternative solution may be used, in which case it will need to be fully documented, clearly indicating the relevant DTS(s) provisions, the nature of the alternative solution, and satisfactorily proving the means by which the Performance Requirements will be satisfied. The BCA approval process is shown on the following page.

A4 Processes for determining compliance with alternative solutions

The following points provide some guidance for the RBS.

A4.1 Information required from designer, builder and/ or building owner

- technical supporting evidence.
- reasons why the DTS provisions cannot be met, or why the designer/owner/builder feels they are not suitable. (this is a “negative” request but is probably necessary for assessment of the application, especially if using equivalence to DTS).
- owners request/consent/approval for use of performance methodology and outcome.
- statement as to whether design (or part of the design) has used an alternative solution or DTS provision. (Without this, it may be difficult for the RBS to assess the application.)

Other points to consider:

- Does this approval process and/or outcome impinge on owner/occupiers’ occupational health and safety/workplace responsibilities?
- Do all the people involved (owner, other consultants, authorities, rBs, etc.) understand the design methodology? (For example, does it limit future uses of the building, or require additional maintenance provisions?)

A4.2 Consideration of assessment methods
some reasons which, by themselves, may be inappropriate or insufficient to determine compliance with a performance requirement are:

- Compliance too costly (e.g. cannot be considered equivalent to DTS, unless tested to DTS and testing is too expensive).
- BAB or other approval body has previously approved a similar application.
- Cost savings to owner/builder/developer.
- Method proposed has been used before.
- Supporting argument of compliance with other regulatory required items (e.g. stair has handrail, therefore riser height can be increased).

Regulation not required in other states or territories. approval by expert judgement when BaB/ council or other approval body might not approve (e.g. access for people with disabilities, thermal insulation)

Other points to consider are:

- Does your insurance and that of all other practitioner's insurance allow design/approval to be exercised to the degree proposed?
- When considering building occupants, don't forget cleaners, maintenance staff, visitors, emergency services personnel, etc.
- sensitivity analysis. (Has the alternative solution considered variations to the input data and the effect on the results?)
- available redundancy. (is there a heavy reliance on a single subsystem, such as sprinklers, so that a failure of that one
- Subsystem may have significant consequences?)
- are safety factors to be applied to any calculations? (For example, in egress calculations, a factor of safety of 2–3 might be applied)
- risk/consequences. (is the consequence greater with the proposed solution than if

the deemed-to-satisfy provisions were used?)

- if consequences are greater for the proposed alternative solution, then substantial rechecking and justification may be required.

A4.3 Consideration of other requirements

- Check if there are any additional "in use" requirements — such as durability, servicing, and maintenance — that might be affected or required by the alternative solution. also consider the method of checking and enforcement.

3) **PART B — BUILDING APPEALS BOARD (BAB) OPERATIONS**

B1 Background

The BaB is an independent statutory body established under the Building act 1993 (the act).

The act allows an application to be made to the BAB for a determination that a particular design of a building or an element of a building complies with the relevant legislation.

These applications are known as determination (compliance).

Determinations (compliance) avoid possible appeal situations and allow further flexibility in the building control process.

The modification process has remained but only applies where compliance with a performance requirement cannot be met.

B2.1 Determination (Compliance section 160A)
applicants to the BaB need to differentiate between determination modifications and determination compliance, give reasons for the type of application and submit detailed technical justification (see below).

Compliance applications seeking to confirm that a design complies with the Performance requirements need to be supported by an analysis of the design, using assessment methods similar to those contained in clause a0.9 of Volume one & Clause 1.0.9 of Volume two of the BCA.

B2.2 Determination / Modifications (section 160 and section 160B)

Applications for modifications need to demonstrate:

- The extent to which the proposal fails to meet the Performance requirement.
- Why the Performance requirement is inappropriate in the circumstances.
- Adequate technical justification for the

Proposal

- Also in the case of access provisions, how the works would impose unjustifiable hardship on the applicant.

- Analysis of the proposal against the relevant Performance requirement may, in some cases, require the use of assessment methods similar to those used for compliance applications.

B2.3 Application forms & Fees

For application forms, documentation to be submitted and fees refer to the BAB area of the Building Commission website:

www.buildingcommission.com.au

B2.4 Other Issues

B2.4.1 Documentation to be submitted

Refer to BAB application forms.

B2.4.2 Consultation

Other bodies or persons having an interest in an application will be consulted. Applicants are able to obtain these comments themselves.

3. OTHER REFERENCE DOCUMENTS

B2 Applications to the BAB

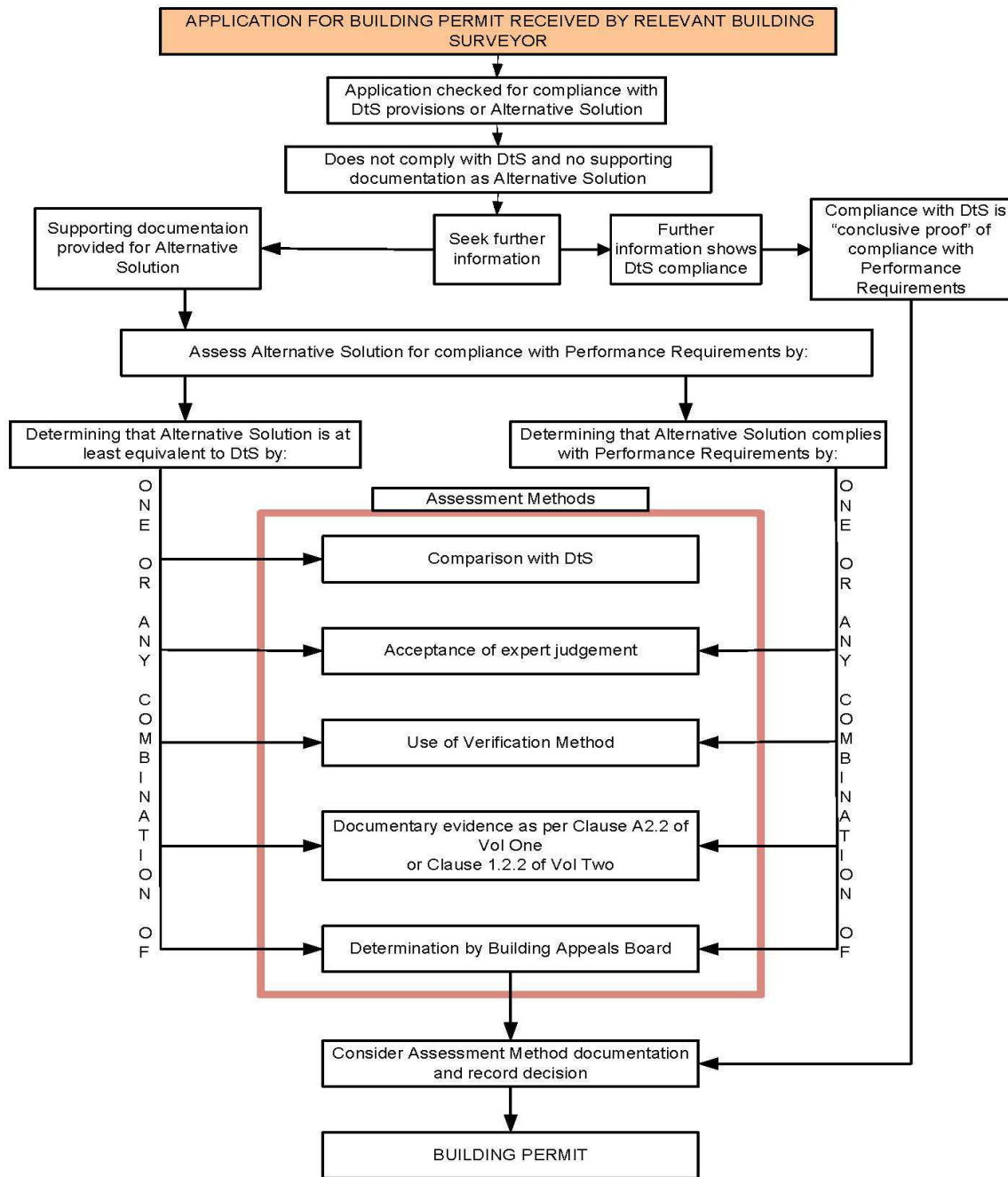


Diagram A

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The information contained in this practice note, along with further reference contained in:

Ministers Guideline:

- MG/04 Certification of engineering designs,

Practice Notes:

PN 2013-37 - Fire performance requirements of the NCC

PN 2011-39 - Building appeals Board guide to applications for modification and compliance assessments,

- PN 2013-59 - sprinkler systems-alternative solutions and role of the Chief Officer, and
- PN 2013-64 - alternative solutions – Procedures and Documentation.

If you have a technical enquiry please email:

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