



CodeMark Protocol for the Assessment of Products against BCA Performance Requirements

VERSION 1.01



Copyright

© Commonwealth of Australia and the States and Territories of Australia 2019, published by the Australian Building Codes Board.



The material in this publication is licensed under a Creative Commons Attribution-No Derivatives—4.0 International licence, with the exception of:

- any third party material
- any trademarks, and
- any images or photographs.

You may not make derivatives of this publication, but may only use a verbatim copy. More information on this CC BY ND license is set out at the [Creative Commons Website](#).

Enquiries about this publication can be sent to:

Australian Building Codes Board
GPO Box 2013
CANBERRA ACT 2601
Phone: 1300 134 631
Email: ncc@abcb.gov.au
www.abcb.gov.au.

Attribution

Use of all or part of this publication must include the following attribution:

© Commonwealth of Australia and the States and Territories 2019 published by the Australian Building Codes Board.

Disclaimer

By accessing or using this publication, you agree to the following:

While care has been taken in the preparation of this publication, it may not be complete or up-to-date. You can ensure that you are using a complete and up-to-date version by checking the Australian Building Codes Board website (www.abcb.gov.au).

The Australian Building Codes Board, the Commonwealth of Australia and States and Territories of Australia do not accept any liability, including liability for negligence, for any loss (howsoever caused), damage, injury, expense or cost incurred by any person as a result of accessing, using or relying upon this publication, to the maximum extent permitted by law. No representation or warranty is made or given as to the currency, accuracy, reliability, merchantability, fitness for any purpose or completeness of this publication or any information which may appear on any linked websites, or in other linked information sources, and all such representations and warranties are excluded to the extent permitted by law.

This publication is not legal or professional advice. Persons rely upon this publication entirely at their own risk and must take responsibility for assessing the relevance and accuracy of the information in relation to their particular circumstances.

Contents

1. Introduction	3
1.1 Scope and objective	3
2. Background.....	3
3. Procedure for assessment.....	3
3.1 Step 1	3
3.2 Step 2	4
3.2.1 Reliance on a report or a certificate	5
3.2.2 Verification Methods.....	5
3.2.3 Comparison with Deemed-to-Satisfy Provisions	5
3.2.4 Expert Judgement and appropriately qualified person	5
3.3 Step 3	6
3.4 Step 4	6
3.5 Step 5	7

1. Introduction

1.1 Scope and objective

This protocol describes how CodeMark Australia Certification Bodies (CBs) must assess products for conformity with the Performance Requirements of the Building Code of Australia (BCA) under the CodeMark Australia Scheme Rules. The objective of the protocol is to ensure that certification decisions by CBs are undertaken in an appropriate and consistent way.

This protocol includes examples that are not to be interpreted as approved procedures for the product types highlighted. They are provided only as a guide to assist in understanding some of the concepts contained in this protocol.

2. Background

The BCA (Volumes One and Two of the National Construction Code – NCC) is a performance-based code containing all Performance Requirements for the construction of buildings. The Performance Requirements set minimum levels of performance for buildings and building elements.

Certification of a building product can be achieved by assessing the product for compliance with-

1. the relevant Performance Requirements;
2. the Deemed-to-Satisfy Provisions; or
3. a combination of 1 and 2.

This protocol describes the process to be used when a product is being assessed in whole or in part for compliance with the Performance Requirements, i.e. 1 or 3 above.

3. Procedure for assessment

3.1 Step 1

Identify the relevant Performance Requirements applicable to the product. The relevant Performance Requirements will be determined by-

- the intended use of the product;
- the provisions of the BCA for which compliance is intended; and
- whether the product is being assessed, in part, against the Deemed-to-Satisfy Provisions.

If the product is intended to be used for a building covered by both BCA Volumes One (Class 2-9 buildings) and Two (Class 1 and 10 buildings), the relevant Performance Requirements from both volumes must be identified.

Example - Step 1 Determining relevant Performance Requirements:

Internal Wall

Consider an internal wall system intended to be used between occupancies in Class 1, 2 and 3 buildings. Certification of the product is sought for compliance with the BCA requirements for fire separation, sound insulation, structural adequacy and fire hazard properties.

Certification for compliance with the BCA requirements for fire separation, fire hazard properties and structural adequacy is to be undertaken against the Deemed-to-Satisfy

Provisions. For this reason, the Performance Requirements for these characteristics of the product do not need to be identified. However, certification for compliance with the requirements for sound insulation for 'impact generated sound' is to be undertaken against the relevant Performance Requirements. The product is intended to be used in buildings covered by both Volume One and Two of the BCA. The relevant Performance Requirements from both volumes must therefore be identified. In this example, the relevant Performance Requirements are-

- FP5.2 and FP5.3 in Volume One; and
- P2.4.6 in Volume Two.

To demonstrate compliance with BCA Volume One, the manufacturer intends to seek certification of the system to attenuate 'airborne sound' (FP5.2(a)) as well as 'impact generated sound' (FP5.2(b)). Similar to fire separation, fire hazard properties and structural adequacy, the 'airborne sound' attenuation parameters of the internal wall system will be undertaken against the Deemed-to-Satisfy Provisions. This is simply demonstrated by documenting the system meets the (Rw) and (Rw + Ctr) requirements of F5.2(a) and F5.5(a)(i) and (ii). The design of the internal wall system, however, does not meet the requirement for discontinuous construction in the Deemed-to-Satisfy Provision F5.3(b)(i). Consequently a Performance Solution will be required to demonstrate attenuation to the 'impact generated sound' requirements of FP5.2(b).

Note: In this example the manufacturer could have decided to not obtain CodeMark Australia certification for 'impact generated sound'. This approach would require this to be clearly articulated as a limitation on the certificate, meaning that the wall system could not be used in circumstances where the BCA requires resistance to impact generated sound.

A similar assessment to the above will be required to demonstrate compliance with P2.4.6(b) in Volume Two.

Note: FP5.3 in Volume One and P2.4.6(c) in Volume Two also require pipes or other penetrations to not compromise the wall's attenuation integrity. The manufacturer has chosen to demonstrate compliance with this requirement through the internal wall system's 'Acceptable Installation Guidelines'. These Guidelines are intended to control the system's approved installation procedures for the internal wall system. The evidence and location of this information needs to be clearly referenced and communicated on the CodeMark Australia certificate.

External Wall

Consider a cladding material intended for use on external walls of Class 2- 9 buildings. Certification for compliance with the BCA requirements for fire separation, fire hazard properties and structural adequacy is to be undertaken against the Deemed-to-Satisfy Provisions. However, certification for compliance with the requirements for weatherproofing will be undertaken against the relevant Performance Requirements. The product is only intended to be used in buildings covered by Volume One of the BCA (Class 2-9). Consequently a Performance Solution will be required to demonstrate compliance with FP1.4.

3.2 Step 2

Establish an Assessment Method(s) for the Performance Requirements identified in Step 1.

The types of Assessment Methods recognised by the BCA for determining compliance with Performance Requirements include-

- a report from an *Accredited Testing Laboratory*
- a certificate from a *professional engineer* or other *appropriately qualified person*

- a *Verification Method* in the BCA or another appropriate *Verification Method*
- comparison with the *Deemed-to-Satisfy Provisions*
- *Expert Judgement*

Note: Italicised terms are defined terms contained in both BCA Volumes One and Two.

3.2.1 Reliance on a report or a certificate

Reports or certificates must clearly articulate relevant quantifiable properties of the product. These values must be relevant to the Performance Requirements against which compliance is claimed as identified in the appraisal report described in Step 4.

3.2.2 Verification Methods

The BCA contains a number of Verification Methods that can be used to demonstrate compliance with a Performance Requirement. If there is no relevant Verification Method detailed in the BCA, an appropriate Verification Method may be a test, inspection, calculation or other method that adequately demonstrates compliance with a Performance Requirement.

An appropriate Verification Method can be identified by-

- establishing the intended use of the product
- identifying the performance characteristics required to satisfy the intended use
- identifying the parameters that can be used to describe the required performance characteristics
- establishing means for evaluation of the parameters which could be by testing, calculation or a combination of both
- establishing criteria for acceptance.

If a Verification Method, other than one contained in the BCA, is selected by the CB, justification for its use must be documented in the appraisal report (see Step 4).

3.2.3 Comparison with Deemed-to-Satisfy Provisions

Comparison of a Performance Solution with the Deemed-to-Satisfy Provisions involves the following steps-

1. identify the parameters that describe the required performance from the relevant Deemed-to-Satisfy Provisions
2. establish the means for evaluation of the parameters which could be by testing, calculation or a combination of both
3. establish the values of the parameters from the Deemed-to-Satisfy Provisions
4. establish the values of the parameters for the corresponding Performance Solution
5. establish criteria for acceptance
6. confirm compliance of the Performance Solution by demonstrating performance equivalent to or higher than the Deemed-to-Satisfy Provisions.

3.2.4 Expert Judgement and appropriately qualified person

Reliance on Expert Judgement or an appropriately qualified person may be appropriate when the Performance Solution parameters cannot be identified or evaluated (quantified). These options have inherent subjectivity. It is crucial that justification for their use, including the basis on which a decision has been taken by the CB, is documented in the appraisal report (see Step 4). This documentation must demonstrate that the 'expert' has the qualifications and

experience to determine compliance with a Performance Requirement. Why other, more objective forms of Assessment Methods could not be applied must also be documented.

Example – Step 2 Selecting the Assessment Method

Internal Wall

In the BCA, there is only a Verification Method for determination of ‘airborne sound’ attenuation (i.e. FV5.2). Consequently, the Verification Method cannot be used to verify compliance for impact generated sound. The manufacturer decides to use the ‘comparison with Deemed-to-Satisfy Provisions’ Assessment Method. The required values of the parameters from the Deemed-to-Satisfy Provisions for ‘impact generated sound’ may be identified by a considered examination of comparable construction systems contained in Specification F5.2 Table 3. It may also be appropriate to obtain these values through the ‘Impact Sound - Test of Equivalence’ documented at Specification F5.5. Whatever methodology is used, it is critical to document the process used to identify the relevant parameters from the Deemed-to-Satisfy Provisions relating to ‘impact generated sound’. This will be crucial to allow comparative evaluation as described in Step 3.

A similar process could be followed for Volume Two P2.4.6 in that values achieved by the processes described for Volume One may be considered for application for an internal wall system in a Class 1 building.

External Wall

The manufacturer decides to demonstrate that the cladding meets the weatherproofing requirements by assessing the product against the Verification Method for weatherproofing (FV1). The cladding product is assessed by a qualified testing body and a test report complying with FV1(e) is obtained.

3.3 Step 3

Undertake an evaluation of the product using the Assessment Method(s) identified in Step 2.

3.4 Step 4

Prepare an appraisal report that documents the outcomes of Steps 1 to 3. The appraisal report must specify-

- the applicable BCA Performance Requirements that the appraisal has been undertaken for
- approaches and methods of analysis
- any assumptions that were made
- the acceptance criteria and safety factors
- an overview and outline of the analysis, modelling and/or testing carried out
- method of analysis used
- calculations and outcomes
- the sensitivities, redundancies and uncertainty studies carried out
- evaluation of results including-
 - a. comparison of results with acceptance criteria
 - b. any further sensitivity studies undertaken
 - c. any Expert Judgement applied and its justification
- specifications of the final design that are deemed to be acceptable, and
- all limitations to the design and any conditions of use.

3.5 Step 5

If the evaluation concludes that the product can be certified as complying with the relevant Performance Requirements, the Certificate of Conformity issued must contain sufficient information so that a person relying on the certificate can identify-

- the properties of the product that have been certified as complying with the Performance Requirements
- the properties of the product that have been certified as complying with the Deemed-to-Satisfy Provisions (if appropriate)
- if the product has been certified as complying with a component of a Performance Requirement, what that component is
- the basis on which the product has been determined as complying with the Performance Requirement and a reference to the documentation used in the appraisal process, and
- all other information required by the Certificate of Conformity template, including any restrictions on the use of the product in order for the certification to be valid.

Availability of all supportive documentation relied upon in making a determination that the product will meet the Performance Requirements is critical to the integrity and transparency of the CodeMark Australia Scheme.

A copy of this documentation should be available on request and its availability highlighted on the Certificate of Conformity.