



INFORMATION SHEET

BUILDING SERVICES

Ref: MAT 12-17
Current at: May 2013

BUILDING PRODUCT CONFORMANCE & THE BCA: PART 2 - DETERMINING HOW TO EVALUATE A PRODUCT AGAINST THE BCA

Manufacturers and suppliers have an obligation to understand when the products they supply to the residential building industry need to meet the requirements of the Building Code of Australia (BCA).

The aim of this information sheet is to provide guidance to manufacturers and suppliers about how they can:

- identify and undertake the relevant steps to evaluate how a product can prove that it meets the relevant performance requirements of the BCA.

For the purposes of these information sheets the term product refers to any material, system or component that is used in the construction of a building.

Part 1 of this series of information sheets sets out *how to determine whether a product needs to conform with the BCA* and how to determine the relevant performance requirements. **Part 3** of this series explains *how to prepare the relevant documentation* to verify a product conforms.

This series is accompanied by a decision tree (Attachment A) which assists manufacturers and suppliers to systematically work through the process of determining when and how a product can demonstrate conformance with the BCA.

Step 4 – Evaluate the product against the performance requirements

The next step involves evaluating the product (through testing or collection of other evidence) to verify that it will perform as required and hence meet the relevant performance requirements of the BCA. As discussed in Step 3 (Part 1), there are three pathways available for this assessment – Deemed to Satisfy (DTS), Alternative Solutions or a combination of the two.

4a Evaluating the product using a DTS Pathway

Where it is appropriate to assess the product against the DTS provisions, then you will also need to determine whether your product aligns with an Acceptable Construction Practice (ACP) or an Acceptable Construction Manual (ACM). This is also outlined in Step 3.

It should be noted that contrary to popular myth, the BCA only requires conformance to either an ACP or an ACM; and NOT BOTH. This is clearly identified in Volume 1 Part A 0.7 (b) and Volume 2 Part 1.0.7 (b).

The information identified in these clauses should be linked to the Assessment Methods set out in the BCA to ascertain a product's validity. Irrespective, of the pathway to be utilised (ACP or ACM) the requirements to evaluate the product are set out in the BCA via:

- Volume 1 Part A 0.9
- Volume 2 Part 1.0.9

There are 4 assessment methods defined in A 0.9 and 1.0.9. Using Volume 2 as a guide, examples of such evidence include:

DISCLAIMER - The above is intended to provide general information in summary form. The contents do not constitute specific advice and should not be relied upon as such. Formal specific advice should be sought by members with respect to particular matters before taking action.

phone 1300 650 620 | fax 1300 655 953 | enquiries@hia.com.au | hia.com.au

1.0.9 (a) Provide evidence that the material, component, system or design meets either a performance requirement OR a DTS provision, as contained in the relevant section of Volume 2 Part 3

This method involves the collection of evidence, whether through product testing, comparison or other investigation that can show how a building product achieves the performance requirements or the DTS provisions.

Example

A new window range is to be introduced into the market. In order to meet the performance requirement of P2.1(d) the DTS provisions of Part 3.6 will apply. This means that where applicable if the window is tested in accordance with AS 2047 and the glass is manufactured and installed in accordance with AS 1288, the window will meet the requirements of the BCA.

The manufacturer will need to develop supporting evidence to prove that the windows do comply with these Standards and hence the BCA.

1.0.9(b) The use of verification methods contained within the BCA.

The BCA defines a verification method as being a test, inspection, calculation or other method that determines whether a building solution complies with the relevant performance requirements. **Note that this method is not viewed as an alternative solution.**

Within the BCA, most, but not all, verification methods apply to systems rather than a single product. Examples from Volume 2 include:

- Energy efficiency for example V 2.6.2.2, with others devoted to
- Acoustics, e.g. V 2.4.6 or
- Wire Balustrades e.g. V 2.5.1 or,

Example

Using V 2.6.2.2, an energy consultant can utilise the verification method as an alternative to using the normal computer software program to arrive at an energy assessment rating for a building.

The next step is to provide evidence that the building solution actually does meet the requirements of the verification method and can be substantiated by modelling.

1.0.9(c) Comparison with the DTS provisions contained within the BCA

This method uses a comparison of the product with the information already contained in the relevant part of the BCA.

The following example shows how this assessment method can be used.

Example

- a) A new insulation material is to be introduced to the market for use as a thermal barrier in class 1 buildings (housing). In order to meet the performance requirement of P2.6 the DTS provisions of Part 3.12 will apply. Assuming the material has a range of R values it would have a number of uses under 3.12.1.2 for roofs; 3.12.1.4 for external walls and 3.12.1.5 for floors
- b) It can be deduced from table 3.12.1.3 (a) that for walls in climate zone 7, a total minimum R value of R2.8 is required. From Figure 3.12.1.3 it can be deduced that the total R value of construction for a brick veneer wall is R 0.56. Therefore the required R value for the insulation product will be R 2.8 minus R 0.56 which equals R 2.24.
- c) Assuming that one of the proposed products has been tested and has an R value of 2.5 then the first step of conformance is achieved.

The next step is to provide documentary evidence that the product actually does achieve the required R value. This aspect is addressed in Step 5.

1.0.9(d) Expert judgement

This method relies on an expert in the field of construction providing their opinion about how the product is suitable for use and complies with the relevant aspects of the BCA.

Example

A new timber engineered wood product is to be introduced into the market. Before it can be approved for use in a given situation it must be determined that it will be fit for purpose. This would include assessing its performance against the relevant sections of the BCA. In the majority of instances the product would be required to show proof of structural reliability. If the product were designed by an engineer to comply with AS/NZS 1170 Loading series and/or the AS 1720 Timber engineering standard it could be deemed appropriate for use in that situation.

There must again be supporting evidence provided with the expert's judgement to accept that the product complies with the BCA.

4b Evaluating the product using an Alternative Solution Pathway

If the product does not conform fully as a DTS Solution, it will be required to show compliance using an alternative solution. If this is the case, it is likely that you will need to engage appropriate technical experts to assist you with the assessment of your product.

The process will involve the development of criteria that, if met, will demonstrate the product's compliance with the required performance clauses of the BCA. Then the product must be evaluated against those criteria. Such criteria will vary depending on the product to be tested. Generally an expert in building certification, engineering or building products will be required to establish the relevant criteria and then to oversee or undertake the required assessment.

In conjunction with the assessment methods described under 4a above, the BCA sets out the methods of assessing an alternative solution under clauses:

- Volume 1 Part A0.8
- Volume 2 Part 1.0.8

The 3 step methodology to determine the relevant performance provisions applicable to an alternative solution are laid out in:

- Volume 1 Part A 0.10
- Volume 2 Part 1.0.10

An alternative solution must also be supported by evidence to show how the product meets the performance requirements.

Summary

Once you have completed the process in Step 4 you may find there are still gaps between the evidence you have and the evidence you need to verify the product meets the performance requirements. If so it is likely you will need expert assistance to help you develop the necessary information to fill the evidence gaps.

It is possible that a product cannot show how it meets the performance requirements, or essentially fails the tests. In this case, the manufacturer or supplier needs to determine if changes can be made to the product to achieve conformance. If changes are not possible, then the product should not be used for building construction which is required to comply with the BCA and potentially should not be used for other purposes, unless it can show that it is 'fit for purpose', being non-structural use or similar.

Part 3 of this series explains what type of documentary evidence needs to be provided once a building product has been evaluated against the performance requirements.

HIA members can contact HIA's Building Services team for more information on 1300 650 620 or hia_technical@hia.com.au.