

BUILDING SYSTEM

Building regulation advisory note

Circular	BS 15-001 (Superseded by NCC 2016 Volume One - Amendment 1)
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External walls and cladding

This circular is to raise awareness and provide advice to councils, certifiers, builders, architects, building designers, industry practitioners and other stakeholders regarding matters that need to be considered when assessing the suitability of external wall systems and attachments to external walls, including aluminium composite panels.

Introduction

The recent Lacrosse building fire in Docklands, Melbourne, has highlighted issues with external wall construction and the use of certain aluminium composite panels as part of an external wall system or as an attachment to an external wall.

The issues with aluminium composite panels primarily relate to multi-storey buildings and the potential for rapid vertical fire spread via the façade or external wall where inappropriate products have been used.

The use of inappropriate façade materials has the potential to affect the safety of building occupants, the public and firefighting personnel.

There is a need to be vigilant where these products are used and to ensure that all building materials, components or systems are suitable and appropriate for their intended use.

What are aluminium composite panels?

Aluminium composite panels are sandwich-type panels consisting of two aluminium faces and a core material, typically being polyethylene, mineral-based material, or a combination of both. Panel thicknesses typically range between 3 and 5 mm.

Many of these products are marketed as architectural building panels. There are a number of different products on the market that appear outwardly similar, yet there is a difference in the core materials used.

The core material affects the fire performance of the panel. Materials with a higher proportion mineral core are generally considered to have better fire performance than those with a polyethylene core or low proportion mineral core.

Products with a high proportion mineral core may have increased fire performance, but would still be considered combustible, unless they have been tested and proven to be non-combustible.

What are the Building Code of Australia requirements?

It is a requirement under the *Environmental Planning and Assessment Act 1979* and Regulation that building work is carried out in accordance with the BCA.

The BCA is a performance based document, and as such, either the prescriptive deemed-to-satisfy provisions may be used, an alternative solution developed, or a combination of both. The information in this circular relates to the deemed-to-satisfy provisions of the BCA.

The issues with external wall construction, including aluminium composite panels, primarily relate to Volume One of the BCA (which pertains to Class 2 to 9 buildings) and to buildings of Type A or B construction.

The BCA includes provisions for materials used in the construction of external walls and attachments to external walls.

Careful consideration needs to be given to the interpretation of what constitutes an external wall and what is an attachment to an external wall in order to ensure the relevant provisions of the BCA are met.

Where a panel forms part of an external wall

External walls of buildings required to be of Type A or B construction must be non-combustible, under Clauses 3.1 and 4.1 of Specification C1.1, irrespective of whether or not that wall also requires a fire resistance level (FRL).

External walls may be required to achieve an FRL if exposed to a fire source feature or otherwise required to be fire resisting under the BCA.

'Non-combustible' in the BCA is determined by testing to AS 1530.1 – *Methods for fire tests on building materials, components and structures - Combustibility test for materials*, or using materials that are deemed

acceptable for use under C1.12 where non-combustible materials are required.

It is important to note that the BCA is a holistic document, and that an external wall may need to meet a number of requirements, such as fire performance, weatherproofing and energy efficiency.

Where a panel is an attachment to an external wall

The BCA permits the use of combustible materials as a finish, lining or attachment to a wall required to have an FRL, if certain requirements are met under Clause 2.4 of Specification C1.1. Importantly one of these requirements is that the material or attachment must not constitute an undue risk of fire spread via the façade of the building.

Ensuring compliance

Practitioners, including certifying authorities, need to be satisfied that suitable evidence is provided to demonstrate that the products proposed for use in the construction of external walls comply with the relevant requirements of the BCA.

Various forms of evidence may be relied upon to demonstrate compliance with the BCA. Acceptable forms of evidence are given in A2.2 of the BCA.

Where consideration needs to be given to the fire performance of a product, it is considered that the most suitable forms of evidence would be a report issued by a Registered Testing Authority, or a CodeMark Certificate of Conformity.

Documentation

Building and approval documentation should include an appropriate level of detail to demonstrate compliance with the BCA with:

- adequate specification of materials and products to be used in the construction of external walls and façades;
- clear identification of what materials and products have been specified for the construction of external walls and façades;
- clear details on how materials and products are to be installed; and
- clear identification of where walls are required to be non-combustible or achieve an FRL.

It is important that certifying authorities, designers, builders and installers are aware of any limitations or special requirements specified on product documentation regarding use or installation.

Builders and installers must also take care to ensure that materials or products being installed during construction are the same as those specified in the approved building documentation.

At the completion of work, appropriate evidence should be sought by the principal certifying authority to confirm that materials and products installed are the same as specified in the approval documentation and that they have been installed in the approved manner.

This evidence may be in the form of documentation, and periodic inspections throughout and at the completion of the building process.

CodeMark

There are a number of external wall products, including some aluminium composite panel products, on the market which have a CodeMark Certificate of Conformity.

Before relying on a CodeMark Certificate of Conformity, users of products and systems should be mindful of the information on the certificate including:

- the provisions of the BCA against which the product or system has been assessed;
- the approved application of the product or system;
- any conditions of the certificate;
- any limitations of the certificate; and
- the certificate's currency.

Further details of the CodeMark scheme, including the CodeMark Scheme Rules, CodeMark certification bodies in Australia, and CodeMark products are available from the Australian Building Codes Board website at www.abcb.gov.au

Further information

For further information please contact the Department of Planning and Environment's Information Centre on 1300 305 693.

Department of Planning and Environment circulars are available from <http://www.planning.nsw.gov.au/circulars>

Authorised by:

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Important note: This circular does not constitute legal advice. Users are advised to seek professional advice and refer to the relevant legislation, as necessary, before taking action in relation to any matters covered by this circular.

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