

BUILDING SYSTEM

Building regulation advisory note

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Related	

Building Code of Australia 2012 – key changes

This circular outlines to councils, certifiers, industry practitioners and other stakeholders of the key changes made to the Building Code of Australia in 2012 as they apply to NSW.

Introduction

The National Construction Code (NCC) Series, introduced in 2011, comprises the Building Code of Australia (BCA) as Volume One and Two and the Plumbing Code of Australia (PCA) as Volume Three.

Volume One and Volume Two of the NCC 2012 (the BCA) came into effect in NSW on **1 May 2012**, while Volume 3 of the NCC 2012 (the PCA) came into effect in NSW on **1 July 2012**.

The BCA component of the NCC

The BCA sets national standards to ensure building works maintain safety, amenity and sustainability for current and future communities. It contains technical requirements for the design and construction of buildings and other structures and covers matters such as structural soundness, fire resistance, access, services, energy efficiency and provisions for health and safety.

The BCA is coordinated and published by the Australian Building Codes Board (ABCB) with each state or territory referencing it in their respective legislation. It is given legal effect in NSW through the Environmental Planning and Assessment (EP&A) Act 1979 and EP&A Regulation 2000.

The BCA is amended annually. New editions commence on 1 May each year. This circular provides information on some of the key changes made in BCA 2012 and relies on the reader having a working knowledge of the BCA.

Information from ABCB

This circular is intended to supplement the following sources of information from the ABCB regarding the changes made with BCA 2012.

- The **Lists of Amendments**, listing each individual change made under BCA 2012, are contained in the back of the respective volumes of the BCA.

- The **ABCB's seminar presentations** on BCA 2012 can be downloaded from the ABCB website at <http://www.abcb.gov.au> under Education: Events and Resources - NCC Information Seminars.

The BCA 2012 amendment

Maintenance of format

The format of the BCA component of the NCC remains unchanged with BCA 2012. The two volumes of the BCA continue to comprise three books, as follows:

- Volume One - deals with Class 2 to 9 buildings (i.e. multi-unit residential, commercial, industrial and public buildings).
- Volume One - Appendices - contains the variations and additions of the states and territories.
- Volume Two - deals with Class 1 and Class 10 buildings (i.e. Housing Provisions). State and territory variations and additions to Volume Two provisions are contained within the document.

BCA 2012 Overview

The majority of the amendments contained in BCA 2012 relate to:

- changes to facilities required in early childhood centres to align the BCA with the National Quality Framework for early childhood education and care
- exemptions from certain BCA requirements for Class 8 electrical network substations
- provisions for structural software
- requirement for handrails to private stairs

- changes to the provisions for wet areas in buildings
- in Volume Two, removal of the Acceptable Construction Practice (ACP) for masonry.

Other amendments relate to:

- minor technical changes
- update of referenced documents.

Amendments to NSW Variations update references to reflect current terms and practices and clarify certain current requirements.

Changes to Referenced Documents

New editions and new references adopted

- AS/NZS 1170.2 'Structural design actions - Part 2 Wind actions' - 2011 edition with 2002 edition required for determination of design wind speed (2002 edition retained for 12 months transition).
- AS 2870 'Residential slabs and footings – Construction - 2011 edition (1996 edition retained for 12 months transition).
- AS/NZS 3666 'Air handling and water systems of buildings – Microbial control' - 2011 editions of:
 - 'Part 1 Design, installation and commissioning'
 - 'Part 2 Operation and maintenance'.
- AS 3700 'Masonry structures' - 2011 edition.
- AS 3740 'Waterproofing of domestic wet areas' - 2010 edition: Note also a change of title from the previous edition.
- ISO 540 'Hard coal and coke – Determination of ash fusibility' - 2008 edition replaces AS 1038.15 (see below).
- ABCB 'Protocol for Structural Software 2011 edition - new reference.
- In Volume One Only - Education and Care Services National Law Act (Vic) - new reference (equivalent national law act for NSW referenced in the NSW Footnote of other legislation).
- In Volume Two only – AS 1397 'Continuous hot dip metallic coated sheet steel and strip-coatings of zinc and zinc alloyed with aluminium and magnesium' - 2011 edition: Note also a change of title from the previous edition (2001 edition retained for 12 month transition).

Amendments adopted

- AS 1288 'Glazing in buildings – Selection and installation' - Amendment 2.
- AS 2159 'Piling – Design and installation' - Amendment 1.

- AS 1720 'Timber structures – Part 1 Design methods' - Amendments 1 and 2.
- AS 1926 'Swimming pool safety':
 - Part 2 'Location of safety barriers for swimming pools' - Amendment 2;
 - Part 3 'Water recirculation systems' - Amendment 1.
- AS/NZS 3500 'Plumbing and drainage – Part 4 'Heated water services' - Amendment 2.
- AS 3600 'Concrete structures' - Amendment 1 to the 2009 edition.
- AS 3959 'Construction of buildings in bushfire-prone areas' - Amendment 3.
- AS 4100 'Steel structures' - Amendment 1.
- AS/NZS 4600 'Cold-formed steel structures' - Amendment 1.
- NASH Standard 'Residential and low-rise steel framing – Part 1 Design criteria' - Amendment C.
- In Volume Two only – AS 4773 'Masonry for small buildings – Part 1 Design' - Amendment 1.

Deletions

- AS 1038.15 – 1995 'Coal and coke – Analysis and testing, Part 15 Higher rank coal ash and coke ash – Ash fusibility' - replaced by ISO 540 (see above).
- ARI 460 – 2000 'Remote mechanical draft air cooled refrigerant condensers' - transition with AHRI 460 2005 completed.
- ARI 550/590 – 1998 'Water chilling packages using the vapour compression cycle' - transition with AHRI 550/590 2003 completed.
- AS 3600 – 2001 'Concrete structures' - transition with the 2009 edition completed.
- Reference of AS 1288 Amendment 2 has resulted in the deletion of:
 - ASTM C1279 - 2009 'Standard test method for specific stresses on glass';
 - AS/NZS 2208 - 1996 'Safety glazing materials in buildings'
 - EN 14179 – 2005 'Glass in buildings' - heat soak test for specified glass types.
- ABCB Protocol for House Energy Rating Software – replaced by a new definition that recognises NatHERS as the appropriate accreditation scheme for house energy rating software.
- In Volume Two only
 - AS/NZS 2699 - 2000 'Built in components for masonry construction – Part 1 Wall ties – no longer

referenced in the deemed-to-satisfy (DTS) provisions due to the removal of the ACP for Part 3.3.

- AS/NZS 4858 – 2004 ‘Wet area membranes’ – no longer referenced in the DTS provisions due to the restructure of provisions for wet areas (see below).

Key amendments to national BCA provisions

Changes made in both volumes of BCA 2012:

- **Provisions for structural software (B1.5 and 3.4.0.2)**

Software used in computer aided design of structural framing systems of a building must now comply with the ABCB Protocol for Structural Software, which can be found on the ABCB website.

This provision aims to provide an alternative path for regulating structural framing systems – in which the design utilises the DTS provisions of relevant Australian Standards but has not been undertaken with the intended sign off by a professional engineer.

- **Slips, trips and falls changes (D2.17 and 3.9.2.4)**

New requirements are made for handrails to private stairs and ramps (within Class 1 buildings, in sole occupancy units of Class 2 and 3 buildings, and in Class 4 parts of buildings). Handrails can assist in preventing and arresting falls. They must provide a continuous handhold along a flight but are not required where a change of level is less than one metre.

- **Wet areas in buildings (F1.7 and Part 3.8.1)**

Relevant parts of each volume of the BCA have been restructured to include a table of requirements for when an element in a wet area of a building must be waterproof or water resistant. The provision continues to be applicable to a building of Class 1, 2 and 3 or a Class 4 part of a building and requires compliance with the newly referenced 2010 edition of AS 3740.

In Volume Two, the Acceptable Construction Manual has been removed, as AS 3740 no longer stands alone. It must be used in conjunction with the requirements of the table and together, form the Acceptable Construction Practice (ACP). All other previous provisions in the ACP have been removed.

- **Bushfire areas (GP5.1 and P2.3.4)**

The Performance Requirement for buildings constructed in a bushfire prone area has been amended to more accurately reflect the risks in bushfires, following recommendations of the Victorian Bushfire Royal Commission.

The amendment is three-fold:

- to explicitly state the types of bushfire attack that a building may have to resist
- to include the concept of “to the degree necessary” to acknowledge that in some circumstances, a construction response to the risk may not be warranted
- to remove the restriction on the duration of the protection, as it is generally accepted that buildings can come under ember attack well before and after the fire front arrives and can continue to be exposed to radiant heat and flame after the fire front has passed.

- **Energy efficiency (Section J and Part 3.12)**

Minor changes have been made to a number of clauses for the purposes of alignment, clarification, expansion and refinement.

A new BCA definition of ‘house energy rating software’ refers to the Nationwide House Energy Rating Scheme (NatHERS) that has been recognised as the appropriate accreditation scheme. Therefore, reference to the ABCB Protocol for House Energy Rating Software has been deleted.

- **Minor technical changes**

Some minor changes have been made in each volume.

Changes made in Volume One of BCA 2012:

- **Verification Method for emergency lighting (EV4.1):**

A new Verification Method has been included for verifying if a proposed emergency lighting system meets the safe illumination level required by the Performance Requirement.

The Verification Method stipulates lux levels to be achieved in various areas and the time frames for achieving and maintaining those levels.

- **Early childhood centres (F2.3, F2.5, F4.2, GP1.5 and G1.3)**

Requirements for facilities in early childhood centres have been expanded to align with those aspects of the National Quality Framework for early childhood education and care that affect the design and construction of centres and their facilities.

New provisions include:

- a new definition that relates to the provision of a centre-based education and care service within the meaning of the Education and Care Services National Law legislation. Services that are licensed or approved under state and territory children's services law are also referenced
- kitchens must restrict the access of children by using child-proof latches
- required nappy change facilities for children under three years of age – size, dimensions and facilities are specified
- adult hand washing facilities required in kitchen and nappy change areas
- the ability to supervise the facility from specified areas. Note: this provision may affect the design of an early childhood centre from its early stages
- sanitary facilities for children to be accessible from indoor and outdoor play areas and constructed to meet specified requirements
- a percentage of the windows in children's rooms to have low sill heights to provide children with visibility of adjacent areas and the outside
- the BCA requires the provision of a barrier around an outdoor play area that complies with AS 1926.1. It also specifies the modified application of the standard to ensure the barrier is designed to keep children inside the play area. The modification is required, as AS 1926.1 provides requirements for a barrier to keep children out of a swimming pool.

- **Carpark ventilation (F4.11)**

Requirements for an atmospheric contaminant monitoring system installed in a carpark have been relocated from Part J5 to Part F4. Carpark ventilation requirements are now located with other ventilation requirements relative to health and safety.

The provisions have been expanded to allow a choice of strategies to control the ventilation – a mechanical system of intermittent operation to provide a minimum number of air changes per hour during a given period or natural ventilation equivalent to the mechanical rate.

The threshold measurement for the

requirement has been changed from vehicles to vehicle 'spaces' on the basis that a 'space' is a more defined, measurable concept.

As a consequential amendment, the definition of 'private garage' has also been changed to refer to 'spaces'.

- **Class 8 electrical network substations (ENS) (numerous provisions)**

Class 8 ENS have been exempted from the BCA requirements for a range of installations and facilities, on the basis of the control systems applied to the design and construction of these buildings through the national and state-based network provider legislation.

Class 8 ENS are purpose built, usually unoccupied and contain hazardous electrical equipment. As water is inappropriate when dealing with fires in electrical equipment, BCA provisions for fire hose reels, hydrants and sprinklers are affected, among other things.

The control systems of the network providers include measures that compensate for the exemptions provided in the BCA.

The term 'electrical network substation' has been defined to provide an understanding of the intended application of the concessions only to substations that meet the specified criteria.

Changes made in Volume Two of BCA 2012:

- **Masonry (Part 3.3)**

AS 4773 Masonry for Small Buildings was referenced as an Acceptable Construction Manual (ACM) in BCA 2011, and the Acceptable Construction Practice (ACP) provisions were retained for a 12 month transition.

In BCA 2012, the ACP from 3.3.1 to 3.3.4, has been deleted, following completion of the transition period. This new reference to AS 4773 now replaces the ACP and forms an alternative ACM to AS 3700.

- **Energy Efficiency (Part 3.12)**

In addition to the changes affected in both volumes as above, in Volume Two, changes to the Australian Government's Renewable Energy Target scheme have resulted in the term 'Renewable Energy Certificate' being replaced by the term 'Small-scale Technology Certificate'.

NSW Variations – amendments for BCA 2012

NSW both volumes:

- **Referenced documents (NSW Specification A1.3 and Part 1.4)**

The Swimming Pools Act, the Swimming Pools Regulation, the Environmental Planning and Assessment Act, the Environmental Planning and Assessment Regulation and the Rural Fires Act have been added to the NSW Tables of Referenced Documents, due to their references in the NSW variations.

The Rural Fire Service's "Planning for Bushfire Protection" has been deleted from NSW Tables of Referenced Documents as the NSW Variations were previously amended and the document was no longer referred to.

- **Footnote: Other legislation affecting buildings**

References have been updated to reflect new names of departments and agencies and to include the new regulating agencies for plumbing and children's services.

NSW Volume One:

- **Special fire protection purpose definition (NSW A1.1)**

The definition has been updated to reflect changes in the names of referenced NSW State Environmental Planning Policies.

- **Fire hazard properties (NSW C1.10)**

Amendments to clarify the intended application of the current provisions, have been made to:

- specifically identify materials that may be treated with retardants
- ensure that national exemptions are not applicable to materials used in an entertainment venue that are regulated via the NSW variation.

- **Energy efficiency (NSW J(A)1.2)**

The provision relative to the application of energy efficiency provisions in NSW is updated to remove reference to a passed implementation date and simply refer to BASIX.

- **Other NSW variations (various clauses)**

Changes to align with amendments to the national provisions have been made in a number of NSW clauses for the purpose of maintaining consistency.

Further information

For further information please contact the Department of Planning & Infrastructure's information centre on 1300 305 695.

This and other Department of Planning & Infrastructure building circulars are published on the web at: <http://www.planning.nsw.gov.au/building-system-circulars>

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