



CPCCBC4001A

APPLY BUILDING CODES AND STANDARDS TO THE CONSTRUCTION PROCESS FOR LOW RISE BUILDING PROJECTS

THEORY EXAM INSTRUCTIONS

1. This exam will occur under standard assessment conditions.
 1. An oral examination may be allowed under certain circumstances. Answers will be documented and FT003 (Oral examination declaration form) must be completed.
2. Participants must provide enough detail in their responses to demonstrate their knowledge and skills.
3. Please fill in the details below, providing your name, signature and date of assessment.
 1. Your signature acknowledges that this is your own work.
4. If a participant initially answers a question incorrectly but modifies their response, they must follow the instructions below:
 1. If a participant changes their response in writing, they must put their initials next to the written change.
 2. If a participant changes their response verbally, this must be noted on the exam paper by the assessor.

Participant name

Michelle Ingram

Participant signature

M. Ingram

Assessor name

Assessor signature

Date

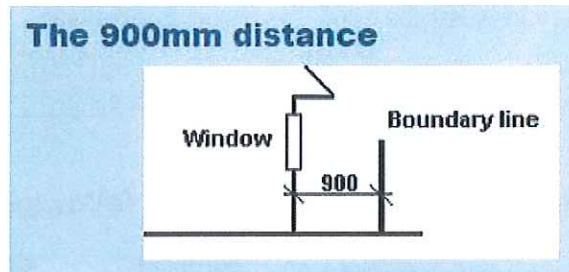
Click here to enter a date.

Number of questions	Number of questions answered correctly	Satisfactory?	
		Yes	No
35		☐	☐



ASSESSOR COMMENTS

- Q1. The diagram below represents an external house wall, shows part of roof and eave and a window in the wall and the vertical boundary line fence is shown a prescribed measurement of 900mm from the house wall to allow light from the sun to reach the window.



What type of regulation could allow a lesser distance to be used if appropriate justification was provided?

In what document/s might you find the appropriate information?

Answer A lesser distance could be applied, when BCA performance-based regulations were adhered to.



- Q2. In regard to the above 900mm distance from house wall to boundary fence and in using or referencing performance-based regulations in the BCA what else should you be aware of and consider?

Answer Part 3.7.1. Fire Separation
Parts 3.7.1.3, 3.7.1.5 and Figures 3.7.1.2., 3.7.1.3. covering Fire-resistance 60/60/60 standards.

Distance and dimensions between a fence and building can also be subject to local government planning laws, so it's important to check local requirements before planning/ building.



Q3. Who has responsibility for producing and maintaining The Building Code of Australia (BCA) and who is it done on behalf of?

Answer The BCA is produced and maintained by the Australian Building Codes Board – this is on behalf of the Commonwealth Government and each State and Territory in Australia.



Q4. Fill in the missing words to complete the following two sentences.

1. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia.
2. It is a Performance-based document that is referenced so that your building system or material can demonstrate that it meets certain performance requirements in order to meet legislative requirements.

Answer



Q5. What is the principal goal of the Building Code of Australia (BCA)?

Answer The BCA's primary goal is to enable the achievement of nationally consistent and minimum necessary standards of safety, health, amenity and sustainable objectives.



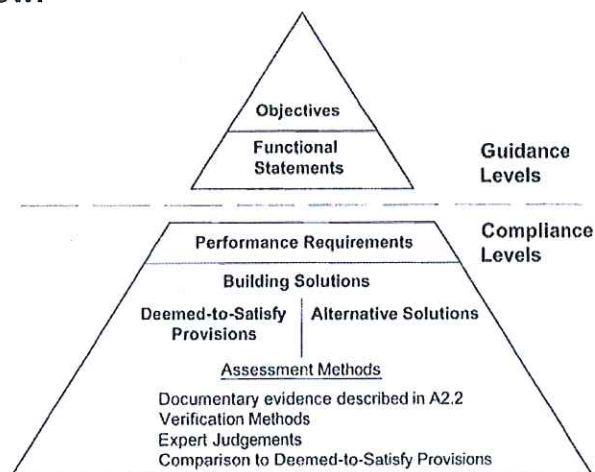
Q6. How many volumes are there in the BCA and to what do the volumes refer?

Answer There are two volumes of the BCA;

Volume One consists of Class 2 - 9 buildings, access requirements for people with a disability in Class 1a and 10a buildings.
Volume Two refers Class 1a and 10a buildings, certain Class 10b structures, and Class 10c buildings.



Q7. Explain the BCA performance requirements for low rise projects from the diagram below.



Answer This table explains the four components which make up the requirements of BCA's performance for low rise projects – it is made up of;

A: The Objectives – covers the need to regulate and safeguard people. Example, relating to inadequacies of height, room or space of a building.

B: Functional statements – how the building is to meet the community's expectation/s. Example, to ensure the height in a room is suitable for the room's intended use.

C: Core of the BCA – Performance requirements. This section falls under the "Compliance Levels" of the model and outline a suitable level of performance for building materials, components, design factors, and construction methods in order for a building to meet the relevant functional statements and, in turn, the relevant objectives.

D: Building solutions – made up of, Deemed-to-satisfy provisions and Alternative solutions. These two methods set-out the means of achieving compliance with the performance requirements of the building.



Q8. What is the intent of the 'Relevant Performance Requirements' in the BCA?

Answer This is defined as the level of performance which Building Solution must meet. Compliance can only be met by achieving the following components;

- a. complying with the deemed-to-satisfy provisions,
- b. formulating an alternative solution which:
 - Complies with the Performance Requirements
 - Is shown to be equivalent to the deemed-to-satisfy provisions
 - A combination of (a) and (b)



Q9. Building solutions set out the means of achieving compliance with the performance requirements. The BCA provides for two methods that can be followed to develop a building solution. Explain these two methods.

Answer Deemed-to-satisfy provisions include materials, components, design factors, and construction methods – when used results in compliance with performance requirements of the BCA. An example if: Ceiling heights must be not less than 2.4 metres in a habitable room.

'Alternative solutions' allows for the adoption of any material, component, design or construction method. An approval authority may still issue an approval if a building proposal differs in whole or in part from deemed-to-satisfy provisions described in the BCA.



Q10. The deemed-to-satisfy building solution establishes a clear and concise process for compliance for a builder, building surveyor or the like (building certifier) who does not want to develop a new means of achieving performance requirements; what does 'deemed-to-satisfy' mean?

Answer Deemed-to-satisfy building solution establishes a clear and concise process for compliance. .





Q11. Write an example of a 'deemed-to-satisfy' provision for a class 1 building including deemed-to-satisfy requirements for kitchen, bathroom, laundry and sanitary facilities.

Nominate where you found the information in the BCA.

Answer

The Class 1 building must have:

- A kitchen sink and facilities for the preparation of and cooking of food; and
- A bath or shower; and
- Clothes washing facilities, comprising at least one washtub and space in the same room for washing machine; and
- A closet pan and washbasin.

The performance requirement for this provision is:

- Suitable sanitary facilities for personal hygiene must be provided in a convenient location within or associated with a building, appropriate to its function or use.
- Laundering facilities or space for laundering facilities must be provided in a convenient location within or associated with a building, appropriate to its function or use.
- A food preparation facility must be provided which includes:
 - A means for food rinsing, utensil washing and waste water disposal,
 - A means for cooking food,
 - A space for food preparation.
- A sanitary compartment must be constructed with sufficient space or other means to enable an unconscious occupant to be removed from the compartment.

This was sourced from BCA Volume Two, P2.4.3: Facilities.



Q12. Who and what is Standards Australia?

Answer Standards Australia are an independent, not-for-profit, non-government organisation. They are recognised as Australia's peak Standards body.



Standards Australia develop internationally aligned Australian Standards and related publications to help ensure the safety, reliability and performance of a range of products, services and systems.

Q13. What are Australian Standards?

Answer Australian Standards are published documents setting out specifications and procedures designed to ensure products, services and systems are safe, reliable and consistently perform the way they were intended to. They establish a common language which refines quality and safety criteria.





Q14. The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used. Please summarise the 10 building classifications below.

Answer

Class	Summary
1	One or more buildings being Class 1a (Single Dwelling), Class 1b (boarding house, hostel)
2	A building containing 2 or more sole-occupancy units each being a separate dwelling.
3	Residential building (other than Class 1 or 2), which is a common place of long term or transient living for a number of unrelated persons.
4	A dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building
5	Office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9
6	A shop or other building for the sale of goods by retail or the supply of services direct to the public.
7	A Class 7a (car park), or Class 7b (storage or display of goods or produce for sale).
8	A laboratory or building for the production, assembling, altering, repairing, packing, finishing or cleaning of goods for sale
9	A public building – Class 9a; health care building, Class 9b; assembly building, Class 9c; aged care building.
10	A non-habitable building or structure: Class 10a; non-habitable building, Class 10b; fence, mast, pool, Class 10c; Shelter.



- Q15. Other than the 10 BCA building classifications (A3.2), there are also multiple classifications (A3.3) where each part of a building is classified separately.**

Where would you find a full list of Past A3 classification of Buildings and Structures?

Answer The full list can be found within Part A3 Classification of Buildings and Structures, in the Building Codes Australia. ☐

- Q16. True or False (Tick your response): If a building or part of a building has more than one classification applying to the whole building or part in accordance with, that building or part must comply with all the relevant provisions of the BCA for each classification.**

Answer

☒	True
☐	False

☐

- Q17. Familiarity with plans and specifications for a project when interpreting a building solution and therefore trying to interpret clauses and other referenced documents in the BCA is important.**

What do plans and specifications include?

Answer These include:

- Floor level plans,
- Elevation plans,
- Sectional drawings,
- All specifications.

☐

- Q18. You must have a clear picture of the building to be constructed and be able to identify the criteria that you will need to compare to the Deemed-To-Satisfy (DTS). What is it you must also consider when constructing complex buildings?**

Answer The clause of one BCA clause may impact the requirements of another. ☐

Q19. Complete the missing words from the sentence below and explain the difference between these points.

BCA Performance Requirements are mandatory **and Deemed-to-Satisfy provisions are** optional.

Answer The BCA Performance Requirements are non-negotiable items and must be adhered to. Whereas the Deemed-to-satisfy are a type of recipe that the BCA have formed, but which are optional in nature compared to the Performance requirements.



Q20. What is a Building Solution?

Answer This means a solution which complies with the Performance Requirements and is an Alternative Solution, or, a solution which complies with the DTS provisions, and a combination of both.



Q21. Referring to the BCA, what are the objectives of Section C Fire Resistance?

Answer

- To examine the basis of existing requirements for non-combustibility and fire resistance in the BCA.
- By considering likely fire severities, to establish the basis on which fire resistance levels should be specified to achieve the regulatory intent and objectives of the BCA.
- To establish the levels of performance required for different methods of construction and occupancy categories.
- To establish the role of non-combustibility in delivering the fire-safety objectives.



Q22. Why is it necessary to identify and document performance-based solutions?

- Answer** It is necessary to identify and document performance-based solutions in order to:
- Comply with organisational quality procedures and processes
 - Apply and interpret relevant documentation and codes
 - Accurately apply National, State and Territory OHS requirements relating to construction workplace
 - Identify faults and problems impacting on OHS and proposing appropriate action to rectify.



Q23. In the context of the Building Code of Australia what are Assessment Methods used to determine?

- Answer** A0.9 Assessment Methods
A0.10 Relevant Performance Requirements
D1.3 When fire-isolated exits are required
CP1, CP2, CP4, CP8, DP4, DP5, EP2.2m IP1.1.



Q24. Explain the importance of maintaining detailed documentation for a building project.

- Answer** The importance of maintaining detailed documentation is to ensure that the building is compliant and can pass assessment. This documentation is a vital reference tool required for inspections of key elements.



Q25. With regard to detailed documentation what are some of the documents that must be provided and maintained by contractors?

Answer

All calculations of building areas, site areas, site coverage, floor areas, building heights, habitable room, windows and secluded private open space on adjoining allotments in order to enable the Authority to determine compliance with their Regulations.

Where plans or drawings are in use, maintain all necessary notes, specifications and analysis to enable the Authority to determine compliance with the Act, the Regulations and the BCA. These may include construction of sanitary compartments, smoke alarms or glazing calculation notes.

Contain full details of any Alternative Solution/s proposed.

Contain all submissions necessary in support of the exercise of discretionary powers under either National, State or Territory regulations.



Q26. Other than the Builder maintaining detailed documentation, who will also have responsibility to resolve and correct errors for any ambiguity identified in the plans?

Answer

The responsible building certifier needs to carefully check the details of the plan against the applicable standards and codes.



Q27. The threat of an accidental fire in a building and to prevent it are important to understanding fire and taking all steps to prevent or confine fire and to prevent fire spreading within the structure as well as to adjoining or adjacent buildings.

In this regard Fire Protection Systems are paramount and are subject to?

Answer The Fire Protection Systems are subject to:

- Building regulations
- Fire regulations
- Insurance company requirements
- Local Government requirements
- Other regulatory authorities



Q28. Briefly explain the following fire definitions:

Answer

Term	Explanation
Fire	Is the repaid oxidation of a gas, liquid or solid substance accompanied by the release of heat and light. Chemically, fire represents an exothermic or heat-producing reaction.
Passive Fire Protection	Is an integral component of the three components of structural fire protection and fire safety in a building. Passive fire protection attempts to contain fires or slow the spread, through the use of fire resistant walls, floors and doors
Active Fire Protection	Is an integral part of fire protection and is characterised by items and systems which require a certain amount of motion and response in order to work (eg: fire sprinkler system or fire detection devices).





Q29. The purpose of fire protection is to:

- 1. Prevent/reduce the possibility of fire and**
- 2. Reduce the spread of fire within and around a building**

Name the two categories or systems that provide measurement and arrangements for fire protection.

Answer

Category 1

Active systems

- Portable fire extinguishers
- Fire hydrants/hose reels
- Sprinkler systems
- Smoke detection and alarm systems

Category 2

Passive systems

- Fire isolated stairs and passageways
- Fire resistant materials (walls, roofs, openings)
- Fire doors
- Fire curtains
- Fire rated ceilings
- Fire stop collars (in floor slabs)



Q30. With respect to the general level of fire protection explain separately the terms 'Fire Load' and 'Fire Load Density'?

Answer

Fire load is refers to the amount o potential heat that can be liberated during the fire of the combustible contents of a given closure.

Fire load density is the fire load of a given enclosure or building divided by floor area. It is expressed as fire load per unit area of floor space.



Q31. Using Volume 2 of the BCA respond to the following:

1. Where in the BCA would you look to find requirements for building in bushfire prone areas for Class 1 and 10 buildings?
2. Where in the BCA would you look to find requirements for building in bushfire prone areas for Class 2-9 buildings?
3. What Australian Standard must be complied with to satisfy the Deemed to Satisfy Provisions for construction of Class 2 and 3 buildings in bushfire prone areas?

Answer

a)	Part 3.0 of Volume Two
b)	Section C, Volume One
c)	Volume One, A0.10



Q32. What is a *Fire Safety Schedule* and its relationship to the approval of development of a class 2 – 9 building?

Answer

A Fire Safety Schedule generally issued with the construction Certificate, enlists all of the Essential Fire Safety Measures that should be installed in the building and the performance standard to which each of these measures must be capable of operating.



Q33. What are building certifiers responsible for?

Answer

Building Certifiers are responsible for ensuring specific compliance is achieved and they do this by conducting visual inspections. Inspections are the most effective way of confirming that the details of the documentation are reflected in the actual on-site construction.





Q34. What are building certifiers not responsible for?

Answer Building certifiers are not responsible for the quality of workmanship within the construction process as this responsibility is that of the builder to the client.



Q35. Where in the BCA would you determine the level of fire resistance required for the construction of buildings?

Answer Volume One, Section C provides the information for the level of fire resistance required for the construction of buildings.



