

CPCCBC4006B

SELECT, PROCURE AND STORE CONSTRUCTION MATERIALS FOR LOW RISE PROJECTS

ASSESSMENT SUMMARY

The assessment activities for *CPCCBC4006B Select, procure and store construction materials for low rise projects* cover all aspects of the unit of competency required. To demonstrate competence in this unit, a participant must undertake all tasks and complete them satisfactorily and consistently. For Apprentices and Trainees, this includes employer completion of the Employer Record Book (ERB).

Participants must read all the information given before starting any assessment task. The assessment tasks are intended to be equitable, fair and flexible. If a participant has any questions or requires alternative arrangements to be made such requests should be directed to their Trainer/Assessor, who should note such arrangements in the 'Assessor Comments' on the affected assessment. If a participant feels they are not yet ready to be assessed, they should discuss their options with their Trainer/Assessor.

To satisfactorily complete the assessment, the participant is required to answer all questions correctly and demonstrate their skills to industry standards. If a participant does not answer some questions or perform some tasks, they will be deemed 'Not Satisfactory' for the task and 'Not Yet Competent' for the unit of competency. The Trainer/Assessor is able to provide the participant with additional information on interpreting the assessment outcomes and provide guidance on the participant's options. Should a participant still be deemed 'Not Satisfactory' they will have the opportunity to undertake a supplementary assessment or appeal the result.

By signing the cover page for each assessment item, the participant acknowledges they understand the assessment instructions and requirements and consent to being assessed. The participant also verifies and assures the RTO that the work submitted is their own work.

Participant Name	Melissa Robertson
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Task	Assessment Results	
Theory Exam	☐ Satisfactory	☐ Not Yet Satisfactory
Practical Assessment	☐ Satisfactory	☐ Not Yet Satisfactory
Outcome for Unit of Competency	☐ Competent	☐ Not Yet Competent

Assessor Name	
Assessor Signature	
Unit Competence Determination Date	Click here to enter a date.

CPCCBC4006B

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THEORY EXAM INSTRUCTIONS

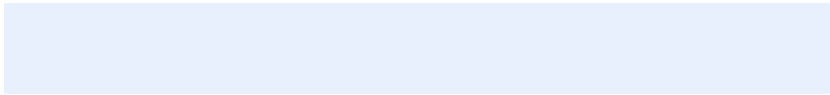
- This exam will occur under standard assessment conditions.
 - An oral examination may be allowed under certain circumstances, whereby the Participant's answers will be documented by a party other than the Participant. This must be acknowledged in writing (e.g. FT001 and Assessor Comments)
- Participants must provide enough detail in their responses to demonstrate their knowledge and skills.
- Please fill in the details below, providing your name, signature and date of assessment.
 - Your signature acknowledges that this is your own work.
- Assessors are to complete marking in pen of a different colour to the Participant.
- If a Participant initially answers a question incorrectly but modifies their response, they must follow the instructions below:
 - If a Participant changes their response in writing, they must put their initials next to the written change.
 - If a Participant changes their response verbally, this must be noted on the exam paper by the assessor.

Participant name Melissa Robertson

Participant signature 

Date 9/09/2021

Assessor name _____

Assessor signature 

Date [Click here to enter a date.](#)

Number of questions	Number of questions answered correctly	Task outcome (Tick)	
		Satisfactory	Not Yet Satisfactory
44		☐	☐

Q1. Which of the following documents and/or people would you refer to when selecting materials for a building project? Tick all that apply.

Answer	Choice	Possible Answers	
	☒	Australian Standards	☐
	☐	Contract	
	☒	Drawings	
	☒	Manufacturer	
	☒	National Construction Code	
	☒	Specifications	
	☒	Tolerances	

Q2. Identify the Volume and Parts of the NCC that relate to suitability of materials for Classes 1 and 10, and Classes 2 to 9.

Answer	Classes 1 and 10	Classes 2 to 9	
	Volume 2 Part A5	Volume 1 Part A5	☐

Q3. Identify the assessment methods used to verify a performance solution.

Answer		
	• Evidence of suitability • A verification method • Expert judgement • Comparison with the Deemed-to-Satisfy provisions	☐

Q4. Which of the following solutions for material selection often references the Australian Standards? Tick your response.

Answer	Choice	Possible Answers	
	☒	Deemed-to-Satisfy solution	☐
	☐	Performance solution	

Q5. Identify five (5) materials commonly used for *low rise buildings* in your region. For each material, identify the following:

- Its name
- Properties of the material

Answer

#	Material name	Properties
1	Glass	• They provided people with the ability to both let light into rooms while keeping inclement weather outside. Glass is generally made from mixtures of sand and silicates, and is very brittle.
2	Wood	• different structures can be built in most climates • very flexible under loads, keeping strength while bending • incredibly strong when compressed vertically • There are many types so specific species are better for various uses than others
3	Brick and Block	A brick is a block made of kiln-fired material, usually clay or shale, but also may be of lower quality mud, etc. Clay bricks are formed in a moulding (soft mud method), or in commercial manufacture by extruding clay through a die and wire-cutting them to the proper size (the stiff mud process).
4	Concrete	Concrete is a composite building material made from the combination of aggregate (composite) and a binder. Concrete has a rather low tensile strength, it is generally strengthened using steel rods or bars (known as rebars), referred to as reinforced concrete.
5	Metal	• Steel - a metal alloy whose major component is iron which is strong, flexible, and if refined well and/or treated lasts a long time • Aluminium alloys and tin are lower density/corrosive resistant • Brass was common but is usually restricted to specific uses today • Other metals used include titanium, chrome, gold and silver. • Chrome, gold, and silver are used as decoration



- Q6. For each of the materials in Q5. identify the following:
- Quality of the material (i.e. durability, serviceability, cost effectiveness)
 - Compatibility and non-compatibility of the material (i.e. what it would/would not be suitable for)

Answer

#	Quality	Compatibility
1	High quality when used appropriately	Suitable for doors and windows along with decorative applications, not suitable for load bearing applications.
2	Medium to High when used appropriately subject to species and preparation	Select species are suitable for structural applications, due to differing strengths and properties of differing species others are only suitable for cosmetic applications.
3	High quality	Excellent for structural applications, withstand weathering, cost effective and flame retardant making it suitable for areas where flammable products are now.
4	Medium due to it's low tensile strength without reinforcement	When reinforced excellent for load bearing applications
5	Medium to low subject to type	Each type has limited applications however overall can be used for a broad range of use, steel had high strength and excellent longevity when treated correctly, copper is highly conductive however costly.



Q7. Identify five (5) physical characteristics that may be considered when evaluating potential building materials.

Answer

- Density and specific gravity
- Strength
- Electrical conductivity
- Thermal conductivity and capacity
- Moisture absorption

☐

Q8. Match the terms and definitions below by writing the appropriate letter next to each number in the centre column.

Answer

Term		Answers	Definition	
1	Carbon footprint	1 -B	A	The amount of energy required to manufacture a product
2	CO ₂ e	2 -E	B	Total GHD emissions produced during manufacture construction and use
3	Embodied energy	3 -A	C	Greenhouse gas emissions
4	Embodied water	4 -D	D	The amount of water required to manufacture a product
5	GHG	5 -C	E	CO ₂ equivalent tonnes emitted into the atmosphere

☐

Q9. Which of the following materials would be considered as 'low energy content'? Tick all that apply.

Answer

Choice	Possible Answers
☐	Bricks
☒	By-products of other industrial processes
☐	Cement
☐	Glass
☐	Metals
☐	Plastics
☒	Sand
☒	Stone
☒	Timber

☐

Q10. Refer to the table below and identify the wall material type that has the smallest embodied energy and emission impact.

COMPONENT	kWh/ m2 indoor floor area	Kg CO2e/ m2 indoor floor area
Floor suspended slab 114 - 117 mm	208	68
Floor suspended timber on stumps	76	26
ROOF		
Roof steel frame colorbond steel or tile	209	72
Roof timber frame colorbond steel or tile	143	47
WALLS		
Walls double brick; s/b interior	312	103
Walls brick veneer timber frame	204	67
Walls timber frame fibro clad	61	20
Walls steel frame fibro clad	90	30
Walls Timber frame timber clad	68	23
Walls pre-cast concrete	264	88
Walls concrete block	160	53
OTHER, APPLICABLE TO ALL HOMES REGARDLESS OF TYPE		
Construction, admin, transport, other materials such as copper pipes, glass, aluminium	406	144
Floor coverings assume approx. 50% ceramic tile 50% polypropylene carpet	61	20
Fittings, fixed appliances built in \$ bathroom, kitchen, w/robes	96	43
ADDITIONS	kWh/ m2 area or m length	Kg CO2e/ m2 area or m length
Roofed open areas - alfresco / porch / verandah / carport	352	117
Garage single brick or cavity walls, concrete slab, steel or tile roof	675	219
Open Carport	352	117
Fence brick or metal (per metre length, assuming 1.5 m height)	186	61
Paving (brick or concrete)	96	32
Pool (concrete below ground)	534	198

Answer Walls, timber frame fibro clad



Q11. Identify the Volume and Parts of the NCC that relate to energy efficiency of materials for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
NCC Volume 2 Section 2 Part 2.6	NCC Volume 1 Section J part 10

☐

Q12. Identify the relevant section of the Standards and Tolerances Guide and the associated Australian Standard that addresses residential slabs and footings.

Answer

Standards and Tolerances Guide	Australian Standard
Section 3	AS2870-2011 Residential Slabs and Footings

☐

Q13. Identify the relevant section of the Standards and Tolerances Guide and the associated Australian Standard that addresses roof tiles.

Answer

Standards and Tolerances Guide	Australian Standard
7.4	AS 2050-1995 Installation of roof tiles

☐

Q14. Identify the Volume and Parts of the NCC that relate to safety barriers for swimming pools for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
NCC Volume 2 part P2.7.1	NCC Volume 1 Part D3.10

☐

Q15. In some states, barriers and fences for swimming pools are not entirely regulated by the NCC, as noted in the Ancillary Provisions and State and Territory Variations. Identify the applicable Act and Regulation that regulate safety barriers for swimming pools in your jurisdiction.

Answer

Building Act 1975 and the Building Regulation 2006

☐

Q16. Identify the Australian Standard that relates to safety barriers for swimming pools.

Answer Australian Standard AS 1926.1- 2012

☐

Q17. True or False (Tick your response): According to the Standard in Q16. all gates must be fitted with a self-closing device that will return the gate to a closed position from any position without the use of manual force.

Answer

☒	True
☐	False

☐

Q18. Identify the Volume and Parts of the NCC that relate to fire-resistance of building elements for Classes 1 and 10, and Classes 2 to 9.

Answer

Classes 1 and 10	Classes 2 to 9
Volume 2 schedule 5	Volume 1 Schedule 5

☐

Q19. Identify the Australian Standard that relates to fire-resistance tests for elements of construction.

Answer Australian Standard AS 1530.4:2014

☐

Q20. For all NCC Classes, where the ground or subfloor space is excessively damp or subject to frequent flooding, which durability class must the subfloor framing must be used where above ground?

Answer durability Class 1 or 2

☐

Q21. Identify the Australian Standards that must be observed when meeting the requirements for Q20.

Answer AS 1684.2, AS 1684.3 or AS 1684.4

☐

Q22. True or False (Tick your response): Where materials are not used as intended (or without considering NCC requirements), this can make a significant difference to the life or serviceability of the structure.

Answer

☒	True
☐	False

☐

Q23. Explain why durability and serviceability impact on the cost effectiveness of chosen materials.

Answer Durability and Serviceability impact the life cycle cost analysis, if items require replacement or additional servicing it impacts the overall cost of the materials.

☐

Q24. Provide an example of short term degradation of materials and describe its effects on a building on structure.

Answer Exposure to damp can cause timber to rot, this weakens the structure and leads to significant works being required to remedy.

☐

Q25. Provide an example of long term degradation of materials and describe its effects on a building on structure.

Answer Metal corrosion over time, weakens structures and is costly to remedy.

☐

Q26. You have spoken to a supplier who has indicated that some of the client's desired materials are unavailable. When considering alternative building materials what must be taken into consideration (i.e. other than the client's requirements)?

Answer Cost, longevity, maintenance, suitability.

☐

Q27. Identify two (2) things that you should look for when receiving a delivery of materials.

Answer

- Confirm the correct quantity
- Confirm the condition of the delivery

☐

Q28. If you encounter issues with delivery, what two (2) options do you have?

Answer Reject entire shipment or reject part of a shipment

☐

Q29. Which of the following should be assessed before shifting materials?
Tick all that apply.

Answer

Choice	Possible Answers
☒	What needs to be relocated (e.g. size, weight)
☒	The relocation area, site layout and obstacles
☒	Distance and time to relocate load
☒	Whether a team is available and/or appropriate
☒	Whether PPE must be worn (e.g. for hazardous materials)

☐

Q30. What document should you refer to for guidance on how to handle and store hazardous chemicals?

Answer Safety Data Sheet

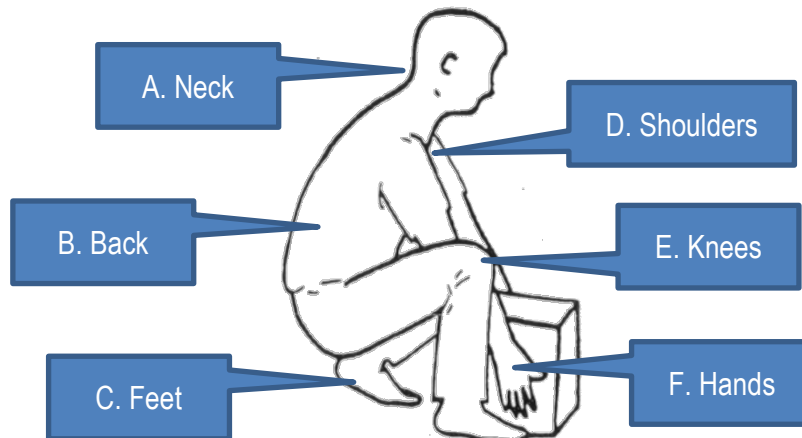
☐

Q31. Name three (3) ways you can reduce the risk of injury if a load is too heavy for one person to carry, push or pull.

Answer Don't lift by yourself, lighten the load, use mechanical aid

☐

- Q32. In the diagram below a person is lifting a tool box.
Filling in the table, indicate how each body part should be used/placed.



Answer ☐

Area of body (Letter)	How it should be placed
D	Level
A	Upright
F	Good grip
B	Natural curve
E	Bent
C	Flat, facing load

- Q33. How should construction materials and components be handled?
Tick all that apply.

Answer ☐

Choice	Possible Answers
☒	Sorted to suit material type and size, separating hazardous material
☒	Stacked or stockpiled for ease of identification and retrieval
☐	Stored in access ways for ease of retrieval
☒	Stored clear of access ways
☒	Handled and positioned ready for installation

- Q34. Identify the Australian Standard that relates to the storage and handling of LP gas.

Answer ☐ Standard AS / NZS 1596

Q35. List one (1) testing method for each of the building materials listed below.

Answer

Material name	Properties
Concrete	Windsor probe test
Metals	Spectrometer Metals Testing
Timber	The Janka hardness test

☐

Q36. What Code gives detailed tables which state the required grade of timber for specific sizes and uses?

Answer *Australian Timber Framing Code*

☐

Q37. Name two (2) ways that defects may be seen in timber.

Answer Splitting, knots

☐

Q38. Identify two (2) tests that may be performed to determine the durability of stone.

Answer Acid immersion, Saturation Coefficient

☐

Q39. Name two (2) ways that defects may be seen in stone.

Answer Cracking, fissures

☐

Q40. True or False (Tick your response): Under a contract, builders and other specialist tradespersons are the ones most likely to rectify or remedy problems that arise from incorrect installation, application or placement of materials.

Answer

☒	True
☐	False

☐

Q41. Name two (2) established methods that may be used to preserve timber.

Answer Dip diffusion, painting

☐

Q42. Identify two (2) established methods that may be used to protect ferrous metals.

Answer Bituminous paint, priming

☐

Q43. Explain why the corrosion resistance of non-ferrous metals is superior to that of ordinary steel.

Answer ☐

The production of a ceramic coating of oxide or salt on the metal which protects it from further corrosion

**Q44. When should aluminium be coated with bituminous paint?
Tick all that apply.**

Answer ☐

Choice	Possible Answers
☐	At all times
☐	When it is buried in soil
☒	When it comes in contact with chemical materials
☐	When it is immersed in water
☐	When it is used on bitumen