

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	Ryan Readdy
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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

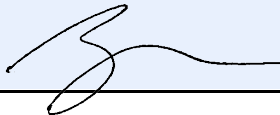
SELECT, PROCURE AND STORE CONSTRUCTION MATERIALS FOR LOW RISE PROJECTS

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 Ryan Readdy

Participant signature



Date 4/07/2020

Assessor name

Assessor signature

Date Click here to enter a date.

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

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	☐
	NCC Volume 2 Part A5	NCC Volume 2 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	Concrete	Concrete is a composite material made from the combination of aggregate and a binder (cement). Once mixed and hydrated, it eventually hardens into a stone-like material.
2	Steel	A metal alloy whose major component is iron which is strong, flexible, and if refined well and/or treated lasts a long time.
3	Brick	A brick is a block made of kiln-fired material, usually clay or shale, but also may be of lower quality mud.
4	Wood	Wood is a product of trees, and sometimes other fibrous plants, used for construction purposes when cut or pressed into lumber and timber, such as boards, planks and similar materials.
5	Glass	Made from a mixture of sand, lime & soda, heated together which forms a liquid glass which is made into sheets and cooled and flattened.



- 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 durability, cohesiveness, hardness, compressive strength. Very little service required with long life expectancy. Relatively expensive, with high energy content.	High compressive strength so good in areas with vehicular traffic, building footings and slabs.
2	High tensile strength, if treated correctly it has a very long life span. Large resources of iron in Australia. Expensive, High energy content.	High tensile strength so good structural members.
3	High durability, low need for servicing, relatively cheap but with high energy content, materials required widely available. Good insulator.	Good for use as a cladding, low structural qualities.
4	Durable material, reasonable compressive and tensile strength. If installed in a protected location low serviceability. Relatively cheap with low energy content.	Excellent material for internal structural members. Not effective as an insulator.
5	Durable material, but it is fragile and requires regular cleaning. Allows light to enter into the building whilst maintaining protection from wind/rain. Expensive, high energy content.	Excellent material for architectural purposes, and achieving natural lighting inside the building. Not very effective insulator but can be arranged to achieve this (double glazing).



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

Answer

Tensile strength
Compressive strength
Malleability
Durability
Serviceability

☐

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 - C	C	Greenhouse gas emissions
4	Embodied water	4 - A	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 Part 2.6	NCC Volume 1 Section J

☐

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

☐

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
Section 7	AS2050

☐

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 3.10.1	NCC Volume 1 Section G

☐

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 Building Regulation 2006 BCA Qld Development Code 3.4
--

☐

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

Answer AS1926.1

☐

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
NCC Volume 2 Schedule 5	NCC Volume 1 Section C

☐

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

Answer AS1530.4:2-14

☐

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 above ground durability Class 1 or 2 timbers or H3 preservative treated timbers

☐

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 Typically materials that have a higher durability class are more expensive, either due to the demand for naturally durable materials or due to the additional treatment applied to the materials.

☐

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

Answer Consider a typical melamine joinery kitchen being installed in an outdoor location, indirectly exposed to rain. Short term degradation of the melamine, including swelling of veneer. Would have little/no impact on the building structure, but will ultimately destroy the joinery.

☐

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

Answer Metal that has not been sealed or the treatment damaged can corrode. Over the long term this may cause the element to fail. ☐

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 Durability
Serviceability
Cost effectiveness
Performance tested
Environmentally sustainable ☐

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

Answer Ensure that the materials are of the correct Class/specification and size.
Ensure that the materials are first rate and do not show signs of damage. ☐

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

Answer ☐ Reject the entire delivery and send back to the supplier.
Accept part of the delivery that does not have issues so as to avoid construction delays, and return the damaged part.

**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)

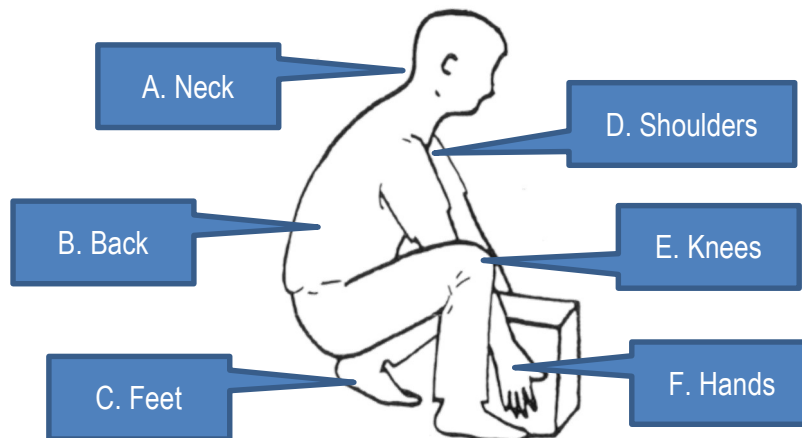
Q30. What document should you refer to for guidance on how to handle and store hazardous chemicals?

Answer ☐ Material Safety Data Sheets MSDS

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 ☐ Break the lift into multiple smaller/lighter lifts
Get assistance from other persons
Use mechanical lifting devices

- 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 AS1596 ☐

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

Answer

Material name	Properties
Concrete	Concrete cylinders or cubes are normally tested in a hydraulic press. A universal machine for tension, compression and bending is also used.
Metals	Hardness is tested by indentation with a diamond or a hardened steel ball. If the tensile strength has been tested, then the hardness of the metal can be deduced.
Timber	A stress grading machine tests every individual piece of timber using a very fast and economical method. The test is based on the relationship between the strength and the deflection of timber. Each piece of timber is deflected at several points along its length, and the deflection category marked by means of a spot of dye. The timber is then classified visually by its colour markings.

☐

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 Visually- Knots or splits
Performance

☐

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

Answer Acid Immersion Test
Water Absorption ☐

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

Answer Cracks and fissures in the rock surface
Colour or grain size uniformity ☐

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 Impregnating the wood with chemicals
Painting and adequate ventilation ☐

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

Answer Painting
Cathodic protection ☐

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

Answer The corrosion resistance of the non-ferrous metals used in building is greatly superior to that of ordinary steel. This is a result of 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

☐

CPCBC4006B

SELECT, PROCURE AND STORE CONSTRUCTION MATERIALS FOR LOW RISE PROJECTS

PRACTICAL ASSESSMENT INSTRUCTIONS

- The following practical assessment will require the Participant to complete work related activities.
- The Assessor will conduct observations of the Participant's work to determine whether they display sufficient practical skills and knowledge.
- Please fill in the details below – providing your name, signature and date of assessment.
 - The Participant's signature acknowledges that the Assessor provided clear instructions and the Participant understood what was required to complete this assessment.
- The Assessor may substitute a Practical Task with an alternate task of equal value.
 - Alternate tasks must be fully documented by the assessor in the Assessor Comments area.

Participant name

Participant signature

Date

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

Assessor name

Assessor signature

Date

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

Task	Task outcome (Tick)	
	Satisfactory	Not Yet Satisfactory
Task 1 (Occasion 1)	☐	☐
Task 1 (Occasion 2)	☐	☐

OBSERVER COMMENTS

CPCBC4006B

SELECT, PROCURE AND STORE CONSTRUCTION MATERIALS FOR LOW RISE PROJECTS

Practical Task 1 (2X)		
Description of task: On two (2) occasions, a suitable observer is to verify the participant's ability to supervise systems through which materials are selected, acquired and stored on site for the following projects: Occasion 1: Construction classified as Class 1 and 10 construction Occasion 2: Construction classified in Classes 2 to 9 with a gross floor area not exceeding 2000 square metres, not including Type A or Type B construction The participant is to gather evidence of how they have completed each component of the Practical Task, which is to be submitted with this Practical Assessment sheet. Evidence to be submitted may include: - Copy of PO sent to site team for materials. - Email correspondence sighting need for materials, delivery of materials and storage of materials (if relevant). The observer is to provide detailed comments on the tasks completed by the participant. The assessor is to verify the observer's comments in the Assessor Comments section, and provide the Practical Assessment outcome on the front cover of this document.		
Resources required: Computer, Building Contract, Drawings, Specifications, Building materials (including timber, and ferrous and non-ferrous metal).		
Assessment of task		
Name of participant:	Ryan Readdy	
Name of observer:	Stewart Betts	
Role of observer (Confirm suitability to sign)	Lic Builder, Site Manage – Matthews Builders	
Email address of observer	sbetts@hotmail.com	
Signature of observer:		
Date:		
When completing the task, did the participant:	Tick if satisfactorily completed. Provide comments if left unticked.	
	1 st Occasion	2 nd Occasion
1 Evaluate building materials		
1.1A. Identify suitability of materials commonly used in the region for low rise buildings.	☒	☒
1.1B. Through research and testing, identify properties of different materials, their quality and compatibility and non-compatibility and maintain effective sampling and organisational record-keeping processes.	☒	☒
1.1C. Identify the environmental impacts of different materials.	☒	☒
1.1D. Identify the impact of allowable tolerances on the conversion of naturally occurring materials.	☒	☒

1.1E.	Identify and check tolerances for installing and assembling materials with regard to the nature of the work being performed and the requirements of relevant construction industry Australian standards.	☒	☒
2 Material selection			
1.2A.	Select materials structurally adequate and appropriate for the building system specified in the contract, drawings and specifications.	☒	☒
1.2B.	Select materials after considering: • Safety • Required fire resistance rating • Suitability to the application • Durability • Serviceability and cost effectiveness • Compliance with NCC, legislation, regulations and Australian Standards	☒	☒
1.2C.	Consider short and long-term degradation of materials in relation to the building's proposed life cycle.	☒	☒
1.2D.	Select and evaluate alternative materials, if specified materials were unavailable or unsuitable – justifying decisions to regulatory authorities, as necessary	☒	☒
1.2E.	Finalise selection of materials in accordance with contractual requirements and in consultation with relevant professionals and the client, compiling results in a report.	☒	☒
1.2F.	Effectively communicate using the following methods: • Language/concepts appropriate to cultural differences • Non-verbal communication	☒	☒
3 Supervising materials on site			
1.3A.	Determine limitations and effects of transportation on material and components, taking action in potentially damaging circumstances.	☒	☒
1.3B.	Ensure materials were correctly and safely handled on site using appropriate equipment and safe work practices.	☒	☒
1.3C.	Communicate with manufacturers and suppliers to ensure materials are stored in accordance with specifications and Australian standards.	☒	☒
1.3D.	Implement processes for inspecting all materials delivered on site for naturally occurring and/or manufactured defects before installation.	☒	☒
1.3E.	Ensure personnel were aware of actions to be taken in the case of defects caused by incorrect installation, application or placement.	☒	☒
1.3F.	Preserve and protect timber and ferrous and non-ferrous metal used in the construction process.	☒	☒
The Participant's performance was: ☒ Satisfactory ☐ Not Satisfactory			

OBSERVER COMMENTS

Ryan is responsible for his ordering and coordinating his deliveries on site. This is especially important for coordination with our crane lifts to ensure that his materials arrive at the correct time so they are sequenced with the lifts. All of which he has been very effective at achieving.