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	Virginia Hemsley

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.

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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: Virginia Hemsley

Participant signature: 

Date: 18/02/2022

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
		☐	☐

ASSESSOR COMMENTS

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
Vol 2 Part A5	Vol 1 Part A5

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

Answer

Evidence of suitability
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	Wood	Strong, flexible under load, highly fire resistant if treated, Sustainably sourced Many types so specific species can be selected for various uses
2	Glass	Durable, long-life span, easy to repair, heat resistant, allows natural light to flow in, weather and rust resistant, excellent insulator against electricity, adds beauty to the structure
3	Colorbond	Provides safety against natural hazards – hail, wind, heavy rain, snow; termite resistant; fire resistant; can collect more water for rainwater storage tanks; lighter than concrete or terracotta tiles; efficient to transport and less on-site wastage
4	Structural steel	Long life span, protection against termite damage, strong
5	Concrete	Workable, fire resistant, thermal and acoustic insulation, compressive strength, impact resistance

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	Cost effective, durable and highly serviceable if treated	Suitable for most climates and structures Frames/Structures, Roof trusses, floor bearers, decking, fencing, pergolas
2	great serviceability – workable, energy efficient, easy to clean, repair, homogenous durable – weather resistant, heat resistant, chemical resistant cost effective – relatively cheap to make and consistent quality	Windows, doors, shower screens, kitchen cabinets, glass blocks Can tint, tempered for resistance, large panels for big spaces
3	Highly durable re rain, wind, hail, snow and heat; long lasting, easy to maintain, energy efficient as reflects heat; Environmentally friendly: can be recycled and made from recycled material; Cost efficiency in the installation- cheaper than tiles in most instances	Can be used on any roof, fencing, gutters, facia, garage doors Can be noisy so will need acoustic blanket
4	Durable: high strength, stiffness, toughness and low weight; corrosive resistant Very cost effective: quality and reliable, reduce risk of fire; easy to maintain: less dust, noise and waste on site	Ceiling joists can span greater distances; can achieve column free interiors to open up space inside a building; Steal beams, columns, floor bearers, lintels, piling
5	Longevity, high compressive strength, safe as doesn't burn Relatively low cost: life cycle savings of more than 20% of total construction cost; Reduce heating & cooling costs re thermal mass; Different concretes offer different degrees of durability depending on environment and properties desired	Slabs on ground, suspended slabs, columns, footings, formwork, reinforcement, driveways, paths, floors Different types of concrete can be used depending on the requirements needed

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

Answer

Strength
Density and specific gravity
Moisture Absorption
Acoustics
Electrical Conductivity

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	CO2e	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	CO2equivalent 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
Vol 2 2.6 and 3.12	Vol 1 Section J Part O

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
3.2	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
7.4	AS2049 and 2050

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
Vol 2 3.10.1	Vol 1 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 Qld – Building Act 1975 Chapter 8

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
Vol 2 3.7	Vol 1 Part A5.4

☐

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

Answer AS 4254 ☐

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 Class 1 or 2 timbers or H5 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 The less durable a material the more costs are involved in maintenance or replacement if the material degrades quickly over time. ☐

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

Answer When timber is exposed to weather it may split or rot which can cause reduction in the strength of the timber and overall structure ☐

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

Answer

Rocks such as sandstone erode over time if constantly exposed to wind and water. This may cause the rock to split requiring repair.

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

Availability
Transport
Handling
Testing
Renewable/Non Renewable
Resuse/Recycling
Waste Reduction
Environmental Impact
Embedded Energy
Fire Resistance Rating
Compatibility
Acoustic Properties
Life-cycle cost
Short or long-term degradation

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

Answer

Confirm the correct quantity has been delivered
The materials are in good condition

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

Answer

Accept the shipment with conditions
Reject the entire 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

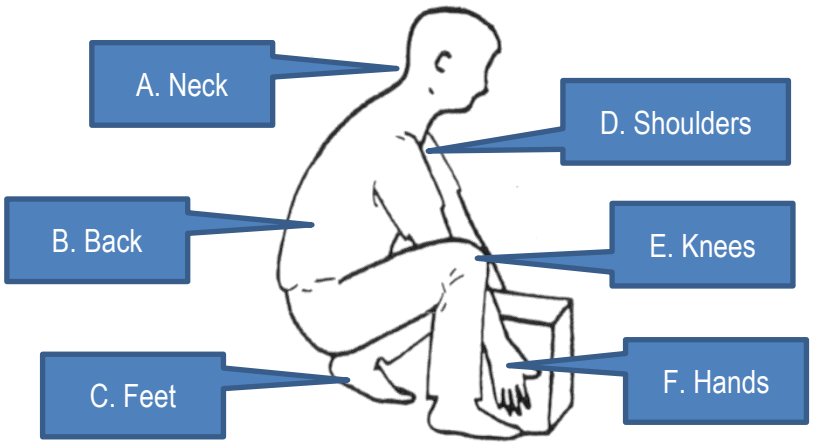
SDS Safety Data Sheet

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

Get help from other team members
use a mechanical aid
lighten the load (split up the load into smaller parts)

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 AS 1596

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

Answer

Material name	Properties
Concrete	Concrete cylinders or cubes tested ina hydraulic press
Metals	Repeated loading
Timber	Stress grading machine where each piece of timber is deflected several times

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

Answer The Australian Timber Framing Code

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

Answer
Knots
Pockets of resin

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

Answer
Acid immersion
Soaking the stone to measure water retention rates

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

Answer Cracks and 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 Impregnate the wood with chemicals
Brush or spray the timber with tar-based oils, organic compounds or water based compounds

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

Answer Painting the metal
Galvanising

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

Answer

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

☐

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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)	☐	☐

ASSESSOR COMMENTS

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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:	
Name of observer:	
Role of observer (Confirm suitability to sign)	
Email address of observer	
Signature of observer:	
Date:	Click here to enter a date.

When completing the task, did the participant:	**Tick if satisfactorily completed. Provide comments if left unticked.**	
	1st Occasion	**2nd 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