

CPCCBC4010

APPLY STRUCTURAL PRINCIPLES TO RESIDENTIAL AND COMMERCIAL CONSTRUCTIONS

THEORY EXAM

Participant name	Jeremy Tydd
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FOR THE PARTICIPANT

Instructions

- You will complete written questions as outlined on the following pages. You must attempt all questions and provide enough detail in your responses to demonstrate your knowledge.
- It is anticipated that you should complete this assessment within two (2) hours, but additional time may be allowed upon negotiation with the Assessor.
- You must complete all questions unassisted by the Assessor or other personnel but may refer to reference material as needed. All questions must be answered correctly for a 'Satisfactory' assessment outcome to be awarded.
 - An oral examination may be allowed under certain circumstances, whereby your answers will be documented by another party.
 - Any written questions that are incomplete, or not answered satisfactorily will need to be completed again after further training support.
 - If you answer a question incorrectly but modify your response, put your initials next to the written change (or the Assessor must initial a verbal change).

Resources required

Pen

FOR THE ASSESSOR

Instructions

- Where oral examination has occurred, ensure that this is acknowledged in writing (e.g. FT001 and Assessor Comments)
- All questions must be satisfactorily demonstrated by the Participant for a Satisfactory determination (indicated by an Assessor tick to the right of the question).
- Assessors are to complete marking in pen of a different colour to the Participant.
- If the Participant verbally modifies their response, write in the modified response verbatim and put your initials next to the written change.

ASSESSOR COMMENTS

As necessary, outline:

- Details on reattempts, alternative arrangements or reasonable adjustments made.
- Where a Participant is deemed 'Not Satisfactory', provide recommendations for future training.

Specify the State or Territory you are responding to when responding to Q1. Q2. & Q3.

State/Territory: QLD

Q1. Identify one current building and construction legislation relevant to the application of structural principles. (*Legislation identified may be national legislation or be specific to your state/territory.*)

Briefly explain how the identified legislation applies to the following:

- Residential construction
- Commercial construction

Answer

Building and construction legislation relevant to the application of structural principles	Queensland building and construction Act 1991 ☐
How does it apply to residential construction?	The legislation tells you what has to be done to meet the standards required for the project
How does it apply to commercial construction	The legislation tells you what level of structural integrity is needed for the works

Q2. Name one (1) current building and construction regulation applicable to your state/territory. Briefly explain how this regulation is relevant to the application of structural principles.

Answer



Fire and safety regulation 2008 - flammability of materials used

Q3. Identify the following current standards.

Answer



Standard	Description
One current standard relevant to the installation of roof trusses	AS 4440-2004 installation of nailed timber roof trusses
One current standard relevant to timber framing	AS 1684.2 n4 10-2010 Residential timber framed construction

Q4. Discuss why builders must refer to the NCC to confirm appropriate application of structural principles relevant to the build.

Answer

The NCC states all of the requirements needed to completed construction ☐

Q5. Provide a brief description for each of the following building classes.

Answer

Building Class	Description
Class 1a building	Type text here A detached houes A group town houses each separated by a fire wall
Class 1b building	Accommodation that is no more than 12 people no larger than 300m2
Class 5 building	Office building
Class 6 building	A shop /show rooom

☐

Q6. Explain why a determination of the climate zone is important when ensuring the structural integrity of the building.

Answer

You must make sure the building is built to the NCC requirements for the correct climate zone. Such as fire zone, wind ratings etc. All of this needs to be taken into account at the design stage.

☐

Q7. You are involved in preparing for the building of a 16-level apartment building where the carpark is underground, and the ground floor consists of shops and cafés/restaurants/bars. Specify the classifications that you will apply to this building.

Answer

Car park class 7A

Shops class 6

Apartments class 2

☐

Q8. Explain why sectional properties are important in structural design.

Answer

Structural designers calculate members to achieve a design.

☐

Q9. Considering sectional properties, what will occur if the structural engineer increases the second moment of area on a beam?

Answer

☐

The would have to increse the beam size witch would increse the strength.

Q10. Identify if the following are examples of either:

- Dead load
- Live loads
- Wind load

Answer

☐

Example of load	Type of load
Reinforced concrete beams	Dead load
Strong winds blowing against a building	Wind load
People walking around	Live load
A soft breeze on a fence	Wind load
A vehicle being parked	Live load
Stone columns	Dead load

Q11. What is the purpose of AS 1684 Residential timber-framed construction?

Answer

☐

It provides details such as bracing and fixing requirements for the building

Q12. Self-healing concrete is one emerging material. Using special bacteria, this material has the ability to “heal” itself if it cracks. This is intended to extend the concrete’s lifespan. Describe the assessment methods you would apply before using this material.

Answer

☐

Expert judgement

evidence

Q13. Which industry professionals would you consult before the site inspection, to discuss if structural performance meets the General Requirements and Performance Requirements of NCC? Provide two (2).

Answer

☐

1. Builder

2. Engineer

Q14. Explain the importance of having project plans and specifications approved.

Answer

☐

All plans must be approved before the start of any work to make sure they comply with local council.

Q15. Describe how you apply structural design and specification documents.

Answer

☐

Structural drawings requirements must be followed through out the construction build.

Q16. What information is provided in the engineer's footing design and specifications documents?

Answer

☐

Footing layout sizes and material strength

Q17. Discuss cadastral survey plans, what they contain and who is responsible for preparing these.

Answer

☐

They provide the information for the boundaries by the cadastral surveyor.

Q18. What is determined from the contour site plan?

Answer

☐

A drawing containing cut and fill areas, slopes and ground features.

Q19. Discuss who prepares and geotechnical report and what this report contains.

Answer

☐

A Geotechnical engineer, will state information about slopes and soil conditions.

Q20. The plans and specifications include underpinning design and specifications due to a change in the imposed loading. Why are these included?

Answer

☐

They are included because the structure used may of changed,should include the new sizes of footinfs and material used.

Q21. Specifications are included for temporary rock anchors to be used for securing a retaining wall. What is the purpose of these?

Answer

☐

Anchors transfer loads using steel bars and have minmal effect during instaltn.

Q22. Explain how shoring specifications differ to specifications for temporary rock anchors.

Answer



Shoring supports the wall of the excavation

Rock anchor supports the soil

Q23. Describe what tanking is and methods used.

Answer



Applying waterproofing to a structure to protect from water intrusion.

Comply with AS 4654.1

Q24. Briefly explain the expected deflection of the following beams.
In your explanation, identify the point of maximum and minimum deflection.

Answer

Beams	Expected deflection
Cantilever beams Beam length = 10 m Fixed support at 0 m Point load at 5 m Load magnitude = 5N	would only have stress on it were it is stretched
Beam with overhang Beam length = 10 m Support #1 = 0m Support #2 = 8m Point load at 4m Load magnitude = 5 N	Maximum deflection would be between the supports
Beam fixed at both ends Beam length = 10 m Fixed support at 0 m Point load at 5 m Load magnitude = 5 N	Deflection would be the most in the middle of the beams and become less towards the end of the beams.



Q25. Briefly explain the performance of the following columns when put under compressive loads.

Answer

Beams	Expected deflection
Steel column	buckle and bend under to much load
Masonry column	Bricks
Reactive powder concrete columns	highest compressive srength



Q26. Briefly explain the safety factor in design of the following types of roof trusses.

Answer

Beams	Expected deflection
Timber trusses	low chance of expansion
Metal trusses	can contract and expand



Q27. Describe wind bracing and four (4) types of wind bracing applied.

Answer

V bracing

K Bracing

Cross bracing

single diagonals



Consider the rafter that the pots are hanging from in the photo below when responding to Q28. Q29. & Q30. Assume that it is a rafter tie also connected to walls on either side.



Q28. Identify the force system that is acting on the rafter. Explain your answer.

Answer

Coplanar and non concurrent



Q29. Describe what would happen to the rafter if the force applied by the hanging pots were too heavy to be held up by the rafter.

Answer

The Rafter would bend



Q30. Identify the force system that would be applied if all the hanging pots are removed from the rafter.

Answer

A coplanar force would be present.



Q31. Describe the general details contained in the project documents for each structural system stated below.

Answer

Structural system	General details
Floor system	The materials and their structural stability
Wall system	Types of structural wall systems, material used
Roof system	Structural design



Q32. What must be covered by the site environmental management plan?

Answer

☐

Enviromental menagement measures such as chemical management

Q33. Discuss what type of information is included in the site safety plan.

Answer

☐

Site rules

emergency procedures

saftey training

Q34. Discuss the different contracts a builder or building company must organise before beginning a residential or commercial construction project. What are the legal requirements for such contracts?

Answer

☐

You will need a written building contract when work is over \$3300

Q35. Identify one (1) potential structural issue for each of the following footing systems.

Answer

☐

Footing system	Potential structural issues
Concrete slab floor	Geotechnical requirements
Mass concrete piers	Risk of cracking

Q36. Describe how the following footing systems perform when bearing structural load.

Answer

Footing system	How they perform when bearing structural loads
Bored pier footing	They transmit load down to the pile cap
Column footing	Disperses the load
Stump footing	Distributes the load
Drilled pile foundation	Friction resistance
Driven pile foundation	Bearing Capacity



Q37. Identify the structural advantages of each of the following footing systems.

Answer

Footing system	Structural advantages
Reinforced piers and beams	Rebar allows concrete to be bor durable
Screw piles	Can carry heavy structures
Brick bases	Can handle large loads



Q38. Why must foundation movement be considered when designing and constructing on-ground concrete slab floors?

Answer



Concrete must be designed/ have the correct stranghts for each job
and there soil types.

Q39. Identify the structural advantages of the following floor systems.

Answer

Floor system	Structural advantages
Suspended concrete floors	They have good load spans and can carry large amounts of weight.
Timber floor frames	The timber acts as a good insulator to heat
Steel floor frames	They require very little maintenance
Aluminium raised floors	Corrosion resistant
Solid hardwood fitted floors	Hard wearing
Engineered wood fitted floors	Good in different weathers



Q40. Identify two (2) actions during the installation of I-joists that may negatively affect their structural integrity. Explain your response.

Answer

1.

cutting may effect the strength

☐

2.

carrying in z flat position will put stress on the midle off it

Q41. What are the structural disadvantages of using platform floors?

Answer

☐

They will most likley be exposed to the elements and get a little weathed

Q42. Why are compressed sheets commonly used in the flooring of wet areas?

Answer

☐

They are resitant to mosture and rotting

Q43. What is one (1) benefit of using vinyl sheet flooring in areas with high foot traffic?

Answer durable

☐

Q44. Describe one (1) structural advantage of using tongue and groove boards for flooring.

Answer

☐

less likley to have gaps due to weather change

Q45. Discuss the structural capability of autoclaved aerated concrete (AAC) flooring panels.

Answer

☐

They can provide load bearing support

Q46. What are the structural limitations of using lightweight AAC as part of a composite loadbearing wall?

Answer

☐

needs to be reinforced and have a protective finish

Q47. Discuss one (1) structural factor that must be considered when integrating tilt-up slab panels into composite walls. Explain your answer.

Answer

☐

Must be built strong enough to withstand lifting in the construction stage

Q48. Identify the structural advantages of using the following products in composite walls.

Answer

☐

Products	Structural advantages in composite walls
Glue-laminated lumber	can carry heavy active loads
Mass concrete piers	Can support heavy loads

Q49. What makes a cavity brick masonry wall a good choice for areas that often experience rain?

Answer

☐

prevents moisture entering the building

Q50. Discuss disadvantages of using single-leaf masonry walls.

Answer

☐

short life span and constant maintenance

Q51. What behavioural properties make AAC a good choice for masonry walls?

Answer

☐

conducts less temperature

Q52. Discuss structural disadvantages of using timber weatherboards as wall cladding.

Answer

☐

poor insulation

poor durability if not maintained

Q53. Discuss how wall coatings differ from regular paint.

Answer

☐

They last a lot longer and are less maintenance

Q54. What structural factors must you consider when using compressed wood panelling as cladding?

Answer

☐

Determine the water resistance and fire resistance

Q55. Identify the structural advantages of the following products used in wall cladding.

Answer

Products	Structural advantages in wall cladding
Corrugated metal sheeting	with stand high winds
Fibre cement cladding	resistant to fire
Tilt-up concrete panels	good sound insulation
Fired bricks	high strength
Unfired bricks	good compressive strenght
AAC bricks	good for eathquake areas



Q56. Discuss one (1) structural advantage and one (1) structural disadvantage when using timber prefabricated roof trusses.

Answer

☐

Timber is weaker than steel in this case but timber performs better if exposed to a fire

Q57. Provide one (1) structural advantage and one (1) structural disadvantage when using steel prefabricated roof trusses.

Answer

Timber is weaker than steel in this case but timber performs better if exposed to a fire

Q58. Name five (5) structural components of a hand cut timber roof.

Answer

☐

1. joist

2. battens

3. purlins

4. ridge board

5. rafters

Q59. Discuss uses and disadvantages of the following roof types.

Answer

Roof types	Uses and disadvantages
Box gable roof	Easier to shed loads not good in high wind
Dual pitch roof	Allows for insulation large amounts of load on footings
Dutch gable and Dutch hip roof	Good in high wind may need high loadbearing walls
Hip and valley roof	Good in strong winds higher risk of leaks
Skillion roof	Good in rain not good in high winds



Q60. What parts of the building make up the gable end?

Answer ☐ Usually underneath the pitched roof

Q61. Discuss north light roofing.

Answer ☐ A series of dual pitched roofs with one section steeper than the other

Q62. Discuss the benefits and disadvantages of using concrete, clay or metal tiles for roof cladding.

Answer ☐

concrete tiles are strong but a very heavy meaning you may need load bearing walls

Q63. Discuss the structural advantages associated with the following types of roof cladding.

Answer

Roof cladding	Structural advantages
Shakes	Durable
Shingles	prevent moisture
Short run sheeting	good in high winds
Long run sheeting	less chance of leaks
Metal sheeting	dose not absorb moisture



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APPLY STRUCTURAL PRINCIPLES TO RESIDENTIAL AND COMMERCIAL CONSTRUCTIONS

WORKBOOK

Participant name	Jeremy Tydd
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FOR THE PARTICIPANT

Instructions

- You will complete written activities as outlined on the following pages. You must attempt all questions and provide enough detail in your responses to demonstrate your knowledge.
- The timeframe for these tasks will be established by your Assessor or Training Plan, but additional time may be allowed upon negotiation with the Assessor.
- You must complete all questions unassisted by the Assessor or other personnel but may refer to reference material as needed. All questions must be answered correctly for a 'Satisfactory' assessment outcome to be awarded.
 - An oral examination may be allowed under certain circumstances, whereby your answers will be documented by another party.
 - Any written questions that are incomplete, or not answered satisfactorily will need to be completed again after further training support.
 - If you answer a question incorrectly but modify your response, put your initials next to the written change (or the Assessor must initial a verbal change).

Resources required

Pen

FOR THE ASSESSOR

Instructions

- Where oral examination has occurred, ensure that this is acknowledged in writing (e.g. FT001 and Assessor Comments)
- All questions must be satisfactorily demonstrated by the Participant for a Satisfactory determination (indicated by an Assessor tick to the right of the question).
- Assessors are to complete marking in pen of a different colour to the Participant.
- If the Participant verbally modifies their response, write in the modified response verbatim and put your initials next to the written change.

ASSESSOR COMMENTS

As necessary, outline:

- Details on reattempts, alternative arrangements or reasonable adjustments made.
- Where a Participant is deemed 'Not Satisfactory', provide recommendations for future training.

NOTE

At times, you will be provided with a specific business context to which you must respond, otherwise it is anticipated that you will use a workplace of your choosing (your own, or hypothetical) to provide the context to the task.

At all times, the responses in your assessment must reference **Australian** (Queensland or Federal) documentation, including legislation, regulations, codes of practice, standards and guidance publications.

ACTIVITY 1

Access the NCC via the internet to locate the requirements applicable to the proposed building development plans at PALLARA, QUEENSLAND (*Handout 1 and Handout 2*) and complete the information below:

Building Description

Classification
Class 1A
Climate zone and description
Climate zone 2 warm summer
Type of construction
Type A
Wind Classification
N2
Site soil classification
Pclass

Site Preparation

Termite management
NCC 3.1.4.3 Termite management systems
Site preparation
cut and compact

Fire resistance and stability

Fire resistance information
Type C
Fire hazard properties of materials, assemblies, fixtures and linings
AS 3786 NCC

Material requirements

Reinforced concrete requirements relative to Australian Standards
AS3600
AS 2870
Structural timber and framing
AS 1684
Provision for services
Drawing no SO4
Glazing requirements specifically for windows, sliding doors with frames
AS 2047

**Satisfactory
Outcome**



ACTIVITY 2

Revisit the proposed building development plans at PALLARA QUEENSLAND (*Handout 1 and Handout 2*) and complete the information below using the plans and specifications:

Identify Earthworks to be completed

Remove loose fill and compact
class 3 material over building site

Identify slab type

Waffle pod

Identify Framing tie down schedule Bottom plate to slab

75 masonry nails

Specify framing tie down bottom plates to floor frame

2/75 x 3.05 nails up to 38 stud

Specify wall frame bracing material

Nominal 30x 0.8mm galvanised strap

Identify compression strength of a brick unit

min 15 mpa

Identify structure of roof system
pre fab roof trusses
Identify roof cladding
concrete roof tiles
Identify wall cladding and sarking
Weatherboard cladding weepholes in brickwork
Identify installation requirements of windows and doors
Internal doors 2040mm Alumin framed windows
Identify membrane to be used around pipes traveling through slab.
0.2mm polyethylene to be taped around pipes

**Satisfactory
Outcome**



ACTIVITY 3

A man living in a bungalow in southern New South Wales notices that small splits and cracks are forming in his house's timber roof trusses. He remembers that his area recently experienced heavy snowfall and calls a contractor for help in fixing the cracks.

During their conversation, the contractor tells him that the trusses were not built to withstand heavy snow loads and that a team will come and fix the trusses.

Given the information above, write a report in the space below, to the man, as the contractor, responding to the following points:

- a) The structural defects of the roof trusses.
- b) What contributed to the structural defects of the trusses identified.
- c) The implications of the structural defect identified.
- d) Structural principles that were not applied.
- e) How the structural defects you identified were caused by failure to apply the relevant structural principle you identified.
- f) The extent of work that needs to be done to rectify the structural defects you identified.

In result of our meeting i have come up with the following results

The roof is in poor condition and has small cracks

The trusses were not designed for the location or to with handle snow on the roof .

I belive if nothing is done to fix it will reslove in the roof colapsing

The trusses need to be replace with larger ones to carry the load.

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APPLY STRUCTURAL PRINCIPLES TO RESIDENTIAL AND COMMERCIAL CONSTRUCTIONS

PRACTICAL ASSESSMENT

Participant name	Jeremy Tydd
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FOR THE PARTICIPANT

Instructions

- The tasks outlined on the following pages will require performance of normal workplace activities, as a result of a structured activity set by an Observer in the workplace or a simulated activity set by your Assessor/Observer.
- The timeframe for these tasks will be established by your Assessor/Observer, in consideration of location conditions and industry requirements.
- You must complete all tasks unassisted by the Assessor or other personnel, unless the steps note this assistance.
- You must attempt all tasks (and itemised steps) for a 'Satisfactory' assessment outcome to be awarded.
 - For any observation conducted that is incomplete, or without satisfactory performance, the observation will need to be completed again after further training support.

FOR THE ASSESSOR/OBSERVER

Instructions

- The following observation record should be used to judge and record your observations of the Participant as they complete the task(s) set. You must record your observations of the Participant's performance.
 - For each occasion, indicate the task performed and whether it was a simulation or workplace-based task.
 - Any simulated assessment must ensure the Participant still performs under workplace conditions which reflect industry standards.
 - In the comments, provide clear detail regarding the task that the Participant was required to do (e.g. PPE used, materials handled, attachments connected, plant types).
- All steps must be satisfactorily demonstrated by the Participant for a 'Satisfactory' determination (indicated by an Assessor tick to the right of each itemised step, or an Observer tick to the right of each itemised step, and confirmation by an Assessor in the Assessor Comments).
 - Where you have determined that one or more task steps have not been satisfactorily demonstrated, provide the Participant with additional support and outline details of such assistance in the Assessor/Observer Comments. Allow the Participant two (2) further opportunities to demonstrate the task again to allow an opportunity for a 'Satisfactory' assessment outcome to be achieved.
 - If after three (3) attempts the Assessor determines that the Participant cannot demonstrate the required steps, a 'Not Satisfactory' outcome is to be determined.

TASK OUTCOME					
Task	Date	Task Type (Tick)	Location	Task outcome (Tick)	
				Satisfactory	Not Satisfactory
Task 1		☐ Workplace ☐ Simulation		☐	☐

ASSESSOR COMMENTS: GENERAL
As necessary, outline: - Details on reattempts, alternative arrangements or reasonable adjustments made. - Where a Participant is deemed 'Not Satisfactory', provide recommendations for future training.

ASSESSOR COMMENTS: PRACTICAL TASK 1	
☐ Individual student (as named on cover page) ☐ Multiple students [☐ All from Attendance Report, ☐ Specific students involved – identify students]	
Task	Provide detail
1.1A. 1.1B. 1.1C. 1.1C. 1.1D. 1.1E. 1.2C. 1.2D. 1.3C. 1.3D. 1.5A. 1.5B. 1.5C. 1.6A. 1.6B.	Specify (✓) where building classifications, criteria requirements and performance solutions were documented: ☐ Workplace Quality document ☐ Quality Assurance Template ☐ Other (please specify): ☐ Document attached as evidence
1.1F.	Specify (✓) who was consulted regarding structural integrity: ☐ Project management ☐ Relevant tradesperson ☐ Builder ☐ Supplier ☐ Other (please specify):
1.1H.	Specify new and emerging building technologies assessed for compliance.
1.2B.	Specify how cut and fill, excavation and compaction was confirmed as compliant with geotechnical report:
1.3B.	Specify where footing type and tie-down details located.
1.3E.	Specify team supervised and floor system installed.

ASSESSOR COMMENTS: PRACTICAL TASK 1	
1.4C.	Specify structural and non-structural wall systems installation supervised to ensure compliance.
1.5D.	Specify how quality finishes were assured for roof systems.
1.6C.	Specify supervision and checks made:

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APPLY STRUCTURAL PRINCIPLES TO RESIDENTIAL AND COMMERCIAL CONSTRUCTIONS

Practical Task 1

Description of task:

The participant must demonstrate the skill and ability to apply structural principles to the construction of one building project including the following points. Documented evidence of all criteria must be presented (*template (HO3) available for use if required*)

- Analyse the structural integrity of building project
 - Read the plans to determine and document the intended use of the building, class and climate zone from the NCC. (*template available- HO3*)
 - Analyse the project documents for compliance with NCC bushfire, high wind, earthquake and alpine environment requirements. (*template available- HO3*)
 - Analyse and document building design and structural integrity from project plans and specifications, building standards and codes. (*template available- HO3*)
 - Determine and document the effect of section properties on various materials. (*template available- HO3*)
 - Determine and document if structural performance meets the General Requirements and Performance Requirements of NCC. (*template available- HO3*)
 - Confirm analysis of structural integrity with relevant industry professionals.
 - Conduct pre-commencement site inspection to confirm analysis.
- Plan, coordinate and manage the laying of footings.
 - Identify earthworks and footing or slab configuration from project plans and specifications.
 - Establish cut and fill, excavation and compaction compliance with geotechnical report.
 - Assess performance of reinforcement, concrete and other elements which contribute to structural integrity of specified footings.
 - Determine compliance with building and construction regulations, standards and codes.
 - Set out footings in accordance with project plans and specifications.
- Plan, coordinate and manage laying of flooring systems
 - Identify flooring systems materials, components and configuration from project plans and specifications.
 - Determine footing type and tie-down details.
 - Assess suspended flooring system component sections' compliance with standards and codes' span requirements. (*template available- HO3*)
 - Determine if floor framing and flooring is compliant with NCC Performance Requirements for climate zone, fire resistance and rising damp requirements. (*template available- HO3*)
 - Supervise and confirm laying of specified floor system complies with project documentation.
- Plan, coordinate and manage the building of wall systems.
 - Determine and analyse structural and non-structural wall systems used in the planning of the building and construction project. (*template available- HO3*)
 - Determine materials used for timber and steel framing and structural steel members meet the Performance Requirements of the NCC and timber framing complies with AS 1684 Residential timber-framed construction.
 - Adhere to and check processes for erecting structural and non-structural wall systems to ensure these comply with manufacturer's specifications and building and construction standards and codes.
 - Apply bracing, tie-downs, tolerances, allowances, and fixing and installation of wall frame components for compliance with relevant Australian Standards, codes and manufacturer specifications.
 - Manage processes to ensure quality of the frame, whether factory pre-cut and pre-nailed, factory pre-cut and assembled on site, or cut and assembled on site.
 - Determine and apply allowances for services to be installed.
 - Ensure the installation of windows and doors is compliant with building and construction standards and code and manufacturer's specifications.
- Plan, coordinate and manage the building of structural roof systems.
 - Identify type of structural roof system and components and determine compliance with Performance Requirements of NCC.
 - Plan, implement and check erection of structural roof, roof trusses or hand cut roof members comply with building and construction standards and codes and accepted industry construction practices.

Practical Task 1

- Plan, implement and check installation of roof sarking and cladding, skylights, roof ventilators and service penetrations comply with building standards, codes and manufacturer specifications.
- Manage processes to ensure roof systems' quality finish.
- Plan, coordinate and manage wall cladding.
 - Assess structural performance of cladding to be used for bracing in the frame construction for compliance with building and construction standards, codes and manufacturer specifications.
 - Determine cladding, vapour permeable sarking or waterproof membrane and components meet the Performance Requirements of NCC.
 - Supervise and check installation of specified cladding complies with building and construction standards, codes and industry-accepted industry practices.

These tasks may be simulated or real. 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. The Observer is to provide detailed comments on the tasks completed by the Participant (on the Observer Comments, overleaf). The Assessor is to verify the Observer's comments, noting their findings in the Assessor Comments (on the back of the Practical Assessment cover page) and provide the assessment outcome.

Resources required:

Construction site and plans, specifications and drawings for one residential or commercial construction; workplace quality policies and procedures; technology to access building and related industry codes, standards and manufacturer product information and materials specifications; Technology to access the NCC and current relevant Acts and Regulations. PPE as required. Materials and tools Documentation of design and construction (suitability or evidence of suitability) (*template available- (HO3)*).

Observer details

Name of observer:	Ayden Cooper
Role of observer (Confirm suitability to sign)	Builder
Email address of observer	admin@cooperconstructions andrenovations
Signature of observer:	
Date:	14-9-24

When completing the task, did the Participant:	Tick if satisfactorily completed. Provide comments if left unticked.
1 Analyse the structural integrity of building project.	
1.1A. Read the plans to determine and document the intended use of the building, class and climate zone from the NCC. (<i>template available- HO3</i>)	✓
1.1B. Analyse the project documents for compliance with NCC bushfire, high wind, earthquake and alpine environment requirements.	✓
1.1C. Analyse and document building design and structural integrity from project plans and specifications, building standards and codes. (<i>template available- HO3</i>)	✓
1.1D. Determine and document the effect of section properties on various materials. (<i>template available- HO3</i>)	✓
1.1E. Determine and document if structural performance meets the General Requirements and Performance Requirements of NCC. (<i>template available- HO3</i>)	✓
1.1F. Confirm analysis of structural integrity with relevant industry professionals.	✓
1.1G. Conduct pre-commencement site inspection to confirm analysis.	✓

When completing the task, did the Participant:	Tick if satisfactorily completed. Provide comments if left unticked.
1.1H. Assess new and emerging building technologies for application to the construction process and their compliance with NCC requirements and relevant Australian Standards.	✓
2 Plan, coordinate and manage the laying of footings.	
1.2A. Identify earthworks and footing or slab configuration from project plans and specifications.	✓
1.2B. Establish cut and fill, excavation and compaction compliance with geotechnical report.	✓
1.2C. Assess performance of reinforcement, concrete and other elements which contribute to structural integrity of specified footings. <i>(template available- HO3)</i>	✓
1.2D. Determine compliance with building and construction regulations, standards and codes. <i>(template available- HO3)</i>	✓
1.2E. Set out footings in accordance with project plans and specifications.	✓
3 Plan, coordinate and manage laying of flooring systems.	
1.3A. Identify flooring systems materials, components and configuration from project plans and specifications.	✓
1.3B. Determine footing type and tie-down details.	✓
1.3C. Assess suspended flooring system component sections' compliance with standards and codes' span requirements. <i>(template available- HO3)</i>	✓
1.3D. Determine if floor framing and flooring is compliant with NCC Performance Requirements for climate zone, fire resistance and rising damp requirements. <i>(template available- HO3)</i>	✓
1.3E. Supervise and confirm laying of specified floor system complies with project documentation	✓
4 Plan, coordinate and manage the building of wall systems.	
1.4A. Determine and analyse structural and non-structural wall systems used in the planning of the building and construction project. <i>(template available- HO3)</i>	✓
1.4B. Determine materials used for timber and steel framing and structural steel members meet the Performance Requirements of the NCC and timber framing complies with AS 1684 Residential timber-framed construction. <i>(template available- HO3)</i>	✓
1.4C. Adhere to and check processes for erecting structural and non-structural wall systems to ensure these comply with manufacturer's specifications and building and construction standards and codes.	✓
1.4D. Apply bracing, tie-downs, tolerances, allowances, and fixing and installation of wall frame components for compliance with relevant Australian Standards, codes and manufacturer specifications.	✓
1.4E. Manage processes to ensure quality of the frame, whether factory pre-cut and pre-nailed, factory pre-cut and assembled on site, or cut and assembled on site.	✓
1.4F. Determine and apply allowances for services to be installed.	✓
1.4G. Ensure the installation of windows and doors is compliant with building and construction standards and code and manufacturer's specifications.	✓
5. Plan, coordinate and manage the building of structural roof systems.	
1.5A. Identify type of structural roof system and components and determine compliance with Performance Requirements of NCC. <i>(template available- HO3)</i>	✓
1.5B. Plan, implement and check erection of structural roof, roof trusses or hand cut roof members comply with building and construction standards and codes and accepted industry construction practices. <i>(template available- HO3)</i>	✓
1.5C. Plan, implement and check installation of roof sarking and cladding, skylights, roof ventilators and service penetrations comply with building standards, codes and manufacturer specifications. <i>(template available- HO3)</i>	✓
1.5D. Manage processes to ensure roof systems' quality finish.	✓

When completing the task, did the Participant:	Tick if satisfactorily completed. Provide comments if left unticked.
6. Plan, coordinate and manage wall cladding.	
1.6A. Assess structural performance of cladding to be used for bracing in the frame construction for compliance with building and construction standards, codes and manufacturer specifications. <i>(template available- HO3)</i>	✓
1.6B. Determine cladding, vapour permeable sarking or waterproof membrane and components meet the Performance Requirements of NCC. <i>(template available- HO3)</i>	✓
1.6C. Supervise and check installation of specified cladding complies with building and construction standards, codes and industry-accepted industry practices.	✓

Observer comments: