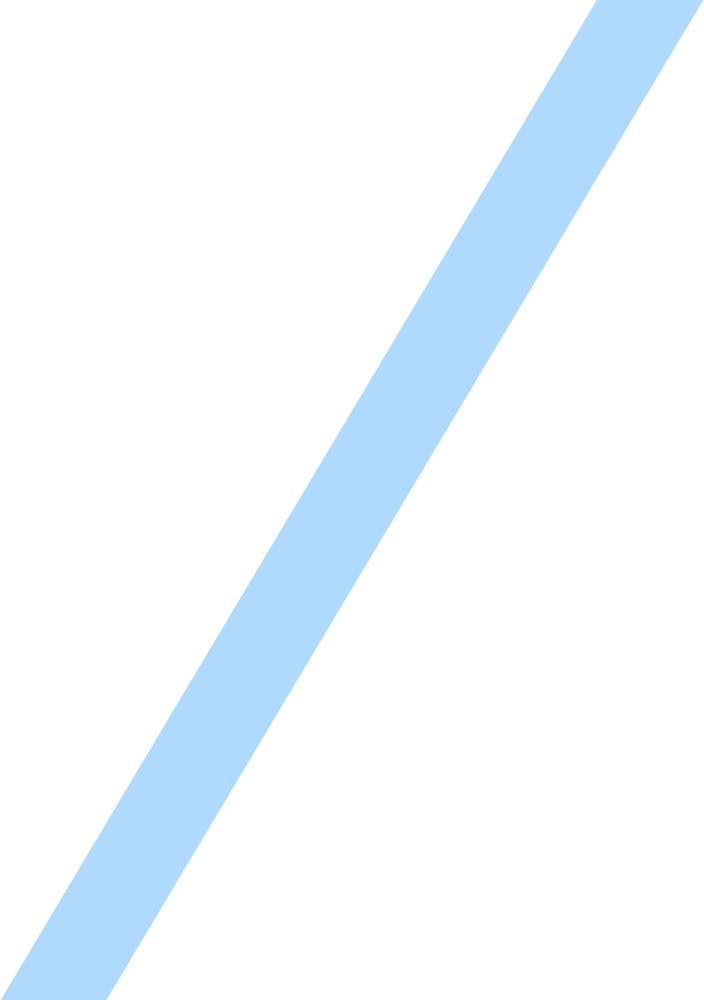
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| Project Name  Email: [Email Here]  Website: [Website Here] |

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| Assessment Report - Submission details | |
| Participant Name: | Jack Don McLovin |
| Topic: | [Enter topic here] Concrete Slabs |
| Unit Code & Name: | [UNIT CODE] – [Unit title] Module 3 Task 2.8 |
| Trainer/Assessor Name: | Yaser Farag |
| Submission date: | ***\_\_\_\_ / \_\_\_\_ / \_\_\_\_5/10/2023*** |
| Work submitted:   * Gone through NCC and associated documents * Determined suitability of raft slab | |
| Declaration: | In submitting this work I declare that no part of any assessment I submit has been copied from another person’s work, except where clearly noted on documents or work submitted. I declare that no part of any assessment I submit will have been written for me by another person. I understand that plagiarism is a serious offence that may lead to disciplinary action. |
| Participant Signature:  (Insert Name) | Jack McLovin |

|  |
| --- |
| Executive Summary *The purpose of this document is to provide a management framework to ensure that levels of risk and uncertainty are properly managed for the remainder of the project. As risk management is an ongoing process over the life of a project, the Risk Register must be considered a ‘snap shot’ of relevant risks at one point in time.* |
| Introduction |

## Describe your scenario

## Target audience

## Report outcomes

*Insert you Report outcomes in relation to project Questions and Answers into the body of the report here*

*Is a raft slab a suitable construction type for that Climate Zone? Support your answer.*

*Yes, we are in light blue as per*

[*https://ahd.csiro.au/dashboards/energy-rating/ncc-climates/*](https://ahd.csiro.au/dashboards/energy-rating/ncc-climates/) *climate zone 6,*

*Refer to volume 2 of the NCC Building Code of Australian V 2.6.1 (Performance Solution)*

*AS2870 (Raft slabs) and Volume 1 Part A5 (Evidence of Suitability) (Accredited testing laboratory) (Documentation of design and construction)(Engineers appraisal)*

V2.6.2.2 Verification using a reference Building Table

V2.6.2.2 Reference Building Requirements

*Class M*

*Articulated masonry veneer*

*Class 1 building, and an enclosed class 10a building for energy efficiency*

*heating load and cooling load must be equal or less than the heat of the building.*

*3.12.1.5*

*insulation greater than R 1.0 around vertical edge of perimeter*

*Although*

*3.12.0.1 we need 6 star energy rating which just needs it on the ground.*

*Locate a concrete supplier in the region to establish availability of materials. Please provide evidence of your nominated supplier.*

***https://www.holcim.com.au/products-and-services/concrete-readymix/standard***

***N32/80/20***

*When constructing in a remote location, list three (3) logistic considerations you would need to take into account.*

***Transport of the truck,***

***Onsite location of the water***

***Onsite maneuvering of truck to slab location***

*What equipment will you need to complete the concrete slab work and how it will be used.*

*Forms, rio, brick to hold forms, plastic raisers to hold rio, wire to hold rio to rio, bolt cutters to cut rio, plumbing to pass liquid through concrete, cement truck, dirt pile, hole excavated.*

*As part of the process for laying the concrete slab you will need to perform a routine quality check on the concrete. Provide a brief explanation of:*

* + - *How testing is completed; and,*

***Testing is done in a laboratory by compression after forming of concrete from the same batch.***

***Slump Test (AS 1012.3.1):***

* + The slump test measures the consistency and workability of fresh concrete.
  + The result indicates the ease with which concrete can be mixed, placed, and finished.

1. **Compressive Strength Test (AS 1012.9):**
   * This test assesses the compressive strength of cylindrical concrete specimens.
   * It provides an indication of the concrete's ability to withstand axial loads or pressure.
2. **Flexural Strength Test (AS 1012.11):**
   * The flexural strength test evaluates the ability of concrete to resist bending stresses.
   * It is particularly important for concrete used in structural elements like beams.
3. **Density and Void Content (AS 1012.18):**
   * The density test determines the mass per unit volume of concrete.
   * Void content is crucial for assessing the degree of compaction and durability.
4. **Air Content Test (AS 1012.11):**
   * The air content test measures the volume of air voids in fresh concrete.
   * It is essential for determining the durability and freeze-thaw resistance of concrete.
5. **Chemical Analysis (AS 1012.14):**
   * Chemical tests are conducted to analyze the composition of concrete materials, especially cement.
   * This ensures that the materials meet specified requirements.
6. **Aggregate Testing (AS 1141 series):**
   * Aggregate tests include grading, particle shape, flakiness, and abrasion resistance.
   * Properly graded and durable aggregates contribute to the overall performance of concrete.
7. **Water Absorption (AS 1141.6):**
   * The water absorption test assesses the porosity of aggregates.
   * It is crucial for understanding the moisture content and potential durability of concrete.
     + *What sampling can tell us about the quality of the material*

***Sample of the same mix can tell us the overall consistency on that day of those materials***

***Random Sampling (AS 1012.12):***

* + Samples should be representative of the entire batch or source of concrete.
  + Random sampling ensures that the obtained test results reflect the overall quality of the material.

1. **Batch Testing (AS 1379):**
   * Concrete batches should be tested regularly to ensure consistency in quality.
   * Testing multiple batches allows for assessing the uniformity of materials and production processes.
2. **Quality Control Plans:**
   * Contractors and suppliers often implement Quality Control Plans based on AS 1379 and other relevant standards.
   * These plans outline procedures for testing, record-keeping, and corrective actions.
3. **Documentation (AS 1379):**
   * Proper documentation of test results, including dates, times, and conditions, is essential.
   * Records provide a basis for quality control and are crucial for compliance and dispute resolution.
4. **Statistical Analysis:**
   * Statistical methods may be applied to analyze test data for trends, variations, and compliance with specifications.
   * Control charts and statistical process control techniques are commonly used.

*Due to the humidity in the air and the potential impact this may have on materials, you’ll need to perform a test to confirm the workability of the concrete mix*

* + - *What is the name of the test that you’ll use to confirm the workability of the concrete mix?*

***The slump test***

### ***Slump Test for Workability:***

#### Method:

1. **Preparation:**
   * A slump cone is filled in three layers, and each layer is compacted using a standard rod.
   * The cone is then lifted, and the change in height of the concrete is measured to determine the slump.
2. **Measurement:**
   * The slump is the difference between the height of the mold and the height of the displaced concrete.
3. **Interpretation:**
   * Higher slump values generally indicate higher workability.

#### Actions If Slump Test Fails Twice:

1. **Adjustment of Mix Proportions:**
   * If the slump test fails to meet the specified criteria twice, adjustments to the mix proportions may be necessary.
   * This could involve changing the water-cement ratio, altering the aggregate grading, or adjusting the type and dosage of chemical admixtures.
2. **Retesting and Documentation:**
   * After making adjustments, conduct a new set of tests to determine if the changes have resulted in the desired workability.
   * Document the adjustments made and the new test results.
3. **Consultation with Design Team:**
   * If repeated adjustments do not achieve the required workability, it may be necessary to consult with the concrete mix design team.
   * The mix design team can analyze the situation, suggest modifications, or reassess the overall mix design.
4. **Review of Specifications:**
   * Review the project specifications to ensure that the specified workability requirements align with the intended application and construction methods.
   * Adjustments may be necessary if the specifications need clarification or modification.
5. **Consideration of Admixtures:**
   * The use of specific chemical admixtures can sometimes improve workability without compromising other concrete properties.
   * Consult with concrete experts to determine if admixtures are a viable solution.
6. **Communication with Construction Team:**
   * Clear communication with the construction team is essential. Ensure that all stakeholders are informed of the adjustments made and the reasons behind them.
7. **Quality Control Measures:**
   * Implement additional quality control measures to monitor the fresh and hardened properties of the concrete continuously.
   * Regular testing during construction helps identify and address issues promptly.
8. **Record Keeping:**
   * Maintain detailed records of all test results, adjustments, and actions taken.
   * These records are valuable for quality assurance, and they provide a basis for future analysis and improvement.
     + *The test has been performed twice and both times the sample has failed due to being outside of tolerance. What must you do now?*

***Add or remove something to the mix, depending if it is above or below tolerance.***

***Compare the test results with the specified requirements outlined in the project specifications. This involves evaluating whether the measured properties meet or exceed the minimum standards set by the design and construction documents.***

*The specification for the concrete is N32/80/20. You had pre-arranged testing for two material samples that were taking during the pouring of the slab and sent for testing. The weather had been extremely hot and damp.*

*It is now fourteen (14) days since the slab was poured and the frame has now been completed and the roof tilers are ready to commence.*

*You have just received the concrete test for the first cylinder. The test result is 12 mPa. for the first cylinder. From the specified requirements and the test results do you consider it prudent to install the roof tiles. Explain you reasoning.*

***You’ve already continued building after the concrete has been poured, are you going to back out and re-pour now? 12Mega Pascals is a 124,000 kg per square meter, I think you’ll be fine, you could probably land a plane on that.***

*What are your next steps in relation to moving forward?*

Keeping track of reports, organizing paying for the concrete, scheduling it in, and then organizing materials to be onsite

## Recommendations

Make the NCC searchable with google queries so we don’t have to memorize the whole document

## Conclusion

In Conclusion the task is suitable to go ahead as it has been designed by skilled practitioners.

## Summary

General overview of the report.

Dot point this section of all the areas covered examples may include

materials required for concrete, how to check the ncc for suitability, how to go through performance requirements checks, and what tests and tolerances are required for the concrete