

July 2024 – March 2025

# **Mechanical engineer of coal mines other than underground mines certificate of competence**

## **Examiners' report 2024-2025**

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### **Written examination**

#### **CME3 – Safety and mining legislation for open cut mines**

##### **Summary of results and general comments**

Exam date: 31 July 2024

Number of candidates: 4

Number who passed: 3

Highest mark: 73.6%

Average mark: 65%

Lowest mark: 50%

##### **Question 1 – Role of mechanical engineer and MECP (Essential)**

Highest mark: 22

Average mark: 20

Lowest mark: 16

Examiners' comments – all candidates were considered competent for the essential question.

##### **Question 2 – WHS Act Primary duty of care**

Highest mark: 20

Average mark: 15

Lowest mark: 7

Examiners' comments – candidates had poor knowledge of how to manage the life cycle of equipment, with some candidates not knowing the basic requirements of WHS Act Section 19.

### **Question 3 – Airborne contaminants**

Highest mark: 20

Average mark: 17.4

Lowest mark: 12.5

Examiners' comments – question answered very well or very poorly depending on the candidate's familiarity with SWA workplace exposure standards for airborne contaminants. It was disappointing that candidates rotated persons through hazardous tasks to satisfy exposure, rather than addressing the risk.

### **Question 4 – Falling objects**

Highest mark: 19

Average mark: 17.5

Lowest mark: 16

Examiners' comments – candidates generally performed okay on practical examples in the workplace, however, the relationship to controls were sometimes lacking.

### **Question 5 - Entanglement**

Highest mark: 19

Average mark: 14.5

Lowest mark: 8

Examiners' comments – although the key controls were understood, there was a lack of knowledge of key geometry requirements of conveyor guards

### **Question 6 – Fire suppression**

Highest mark: 22

Average mark: 15.3

Lowest mark: 6

Examiners' comments – generally, candidates had a satisfactory grasp of workings and differences of various fire suppression systems

### **Question 7 – Conveyor gantry structural integrity**

Highest mark: 19

Average mark: 16.8

Lowest mark: 13

Examiners' comments – candidates generally understood issues involved and managed appropriately.

## Question 8 – Stockpile dozer

Highest mark: 18

Average mark: 13.8

Lowest mark: 9

Examiners' comments – candidates generally aware of the controls placed on stockpile dozers to mitigate the hazard of falling into a valve, however, there was a disappointing general awareness of whether the operator should be rescued before the dozer is recovered. Often the dozer was recovered before the operator was considered. The lack of practical hands-on knowledge of equipment recovery was evident in the responses.

## Question 9 – Blasting and painting SEP

Highest mark: 25

Average mark: 23.3

Lowest mark: 21

Examiners' comments – generally answered satisfactorily, however, some candidates only identified generic hazard/controls.

## Question 10 – Short Answer Scaffolding

Highest mark: 13

Average mark: 8.5

Lowest mark: 6

Examiners' comments – no candidate was deemed competent in this question. Candidates lacked knowledge and understanding of types of scaffolding, competency requirements for each type (including engineered scaffolds), and key geometry of scaffolds.

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## Oral examination

Exam date: 17 October 2024

Number of candidates: 3

Number deemed competent: 1

### Topic 1 – Incident management

Examiners' comments: candidates lacked an understanding of energy control, and the effective management of personnel involved in an incident. They required too much prompting to gather information to identify root cause and the controls required to prevent reoccurrence.

### Topic 2 – Failure management

Examiners' comments: the majority of candidates had an understanding of hazards and controls involved. However, they did not address all energies involved (suspended loads, fundamentally stable, etc).

### Topic 3 – Incident recovery

Examiners' comments: candidates lacked an understanding of all the energies involved, did not consider the adverse conditions, and lacked a systematic approach to consider all aspects of the investigation

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### Post oral examination

Exam date: 13 March 2025

Number of candidates: 2

Number deemed competent: 1

### Topic 1 – Incident management

Examiners' comments:

Candidates in general:

- did not check for hazards or isolate all energies before accessing the injured person
- did not manage the health of all persons involved
- did not gather sufficient information, or look at previous maintenance history, to make sound engineering decisions and identify potential failure modes
- lacked, or did not implement their, structured investigation process
- required too much leading and prompting.

### Topic 2 – Welding fumes

Examiners' comments: candidates lacked specific knowledge of welding fume exposure limits and the health effects. Too much leading and prompting was required to identify suitable controls to eliminate, substitute, or engineer out hazards, and to address the requirements of the notice

### Topic 3 – Develop a management plan / standard of engineering practice (SEP)

Examiners' comments: candidates lacked knowledge of applicable standards, and required leading to identify a suitable team to assess risks and develop structured systems. Engineering Managers need to be clear on what standards they will allow on site and have a structured approach to achieving this.

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### More information

NSW Resources

Resources Regulator

Mining Competence Team

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## Acknowledgements

### Mechanical engineer of coal mines other than underground mines certificate of competence examination panel

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