



Australian Government

Department of Education, Employment and Workplace Relations

RIIUMM304A Construct and maintain underground roads

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the construction and maintenance of underground roads in the metalliferous mining industry. It includes planning and preparing for road construction and maintenance, constructing roads, maintaining roads, and conducting housekeeping activities. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

Application of the Unit

This unit is appropriate for those working in an operational role at worksites within:

- Metalliferous mining

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Plan and prepare for road construction and maintenance	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Plan and prepare work 1.3. Receive, interpret and clarify shift change over details 1.4. Select personal protective equipment appropriate for work activities 1.5. Select appropriate type of equipment and materials according to job type and specifications to maximise efficiency and effectiveness of work activities 1.6. Perform equipment pre-start checks 1.7. Identify, address and report potential risks and hazards 1.8. Identify, address and report environmental issues 1.9. Adhere to emergency procedures as per site procedures 1.10. Inspect and assess site conditions to determine if scaling is required and take action 1.11. Use approved dust suppression and extraction methods 1.12. Erect signs or barricades and/or safety provisions 1.13. Ensure area is well ventilated before entry into work area
2. Construct roads	2.1. Prepare road surface and apply road material to meet planned road characteristics and engineering specifications 2.2. Construct road to conform with road design and location as specified by work plan 2.3. Check for and remove contaminants 2.4. Construct drains and water crossing points as appropriate for the removal of run-off and avoid accumulation of excessive water to minimise road damage 2.5. Ensure access ways are clear whilst constructing road

	2.6. Organise for excess road material to be removed 2.7. Suppress dust utilising approved method 2.8. Complete all required documentation clearly, concisely and on time 2.9. Pass on end of shift information to oncoming shift
3. Maintain roads	3.1. Maintain condition of roads to meet volume of traffic 3.2. Maintain effective drainage for the removal of excess water and ensure safe hauling surface
4. Conduct housekeeping activities	4.1. Check road ensuring site is serviceable 4.2. Carry out shutdown procedures 4.3. Service and make minor adjustments to equipment

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

Specific skills are required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following, as required to construct and maintain underground roads:

- apply legislative, organisation and site requirements and procedures for construction and maintenance of underground roads
- use dumping techniques
- operate, maintain and clean equipment
- interpret ground conditions
- employ pushing techniques
- use hand and power tools
- observe driving regulations and rules
- use towing methods

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following, as required to construct and maintain underground roads:

- construction marking
- drainage construction methods
- drainage methods
- dumping procedures
- dust suppression techniques
- equipment parking
- equipment processes, technical capability and limitations
- equipment safety requirements
- geological and technical data (basic)
- hauling procedures
- hazardous substances (handling and transport)
- isolation procedures
- manufacturer's specifications (equipment, materials)
- material placement procedures
- mining legislation
- operational procedures and checks
- primary and secondary ventilation
- road construction sequence and methods

- road rules
- road stabilisation
- site procedures
- site safety requirements
- start-up and shutdown procedures
- towing procedures
- underground procedures

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following: • knowledge of the requirements, procedures and instructions for constructing and maintaining underground roads • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of underground road construction and maintenance • working with others to undertake and complete the construction and maintenance of underground roads that meets all of the required outcomes • consistent timely completion of underground road construction and maintenance that safely, effectively and efficiently meets the required outcomes
Context of and specific resources for assessment	• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills. • Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances. • The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of

	assessment should not be greater than those required on the job. • Customisation of assessment and delivery environment to sensitively accommodate cultural diversity. • Aboriginal people and other people from a non English speaking background may have second language issues. • Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.
Method of assessment	This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods: • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: • implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the construction and maintenance of underground roads
Guidance information for assessment	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Relevant compliance documentation may include:	• legislative, organisational and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Equipment may include:	• compactor • dust suppression equipment • grader • integrated tool carrier • loader • roller • trucks • water trucks • recommended/required PPE
Dust suppression and extraction methods may include:	• mobile/fixed sprays • screens (vent doors, vent blinds) • use of water trucks • ventilation bags operational • watering down site
Road material may include:	• bitumen • concrete • emulsified oils • gravel • raise borer muck • road base aggregate • sand • select fill • stabilisers and other dust suppressants
Legislation may include Acts and regulation dealing with:	• mining safety and health • mine inspection • OHS

	explosives
Potential risks and hazards may include:	- contaminants (metals, steel rods, vehicles, chemical/physical) - drains - dropper pipes and firing lines - dust - failure to erect barricades and signage - fires - open holes - other equipment and personnel - slippery roads - spillage - unsafe ground
Environmental issues may include:	- dust - exhaust emissions - gas emissions - noise
Road may include:	- all main travel ways - cross cuts - ore body roads - road
Road surface may include:	- fill - flat bedrock - sand - sub-base
Road preparations may include:	- clearing - levelling - stripping
Access ways may include:	drives and cross cuts
Drainage may include:	- berm - netting - ponds - pumping system - shoulder drains - side drains - sub soil drainage - sumps - T pieces
Checks on road may include:	- equipment removed from site - for loose material

	• relevant personnel notified • surface checks • whether signage and/or barricades have been erected or taken down
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Unit Sector(s)

Metalliferous Mining (Underground)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.