



Australian Government

Department of Education, Employment and Workplace Relations

RIIMSM303A Install underground shaft

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the installation of ground shafts in the metalliferous mining industry. It includes excavating and fitting out shafts. 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. Excavate shaft	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Inspect and evaluate site and ground conditions at the planned shaft location to determine the type of shaft to be sunk 1.3. Identify and address potential risks and hazards 1.4. Conduct or facilitate shaft excavation in planned location and type 1.5. Stabilise unconsolidated ground to prevent falls of ground and shaft collar erosion 1.6. Ensure shaft is supported by shaft pillar to ensure the integrity of the bottom section of the shaft 1.7. Secure area over shaft collar to prevent surface water inflow 1.8. Ensure that brow area near the bottom of the shaft, and the geology and walls, are visible for inspection
2. Fit out shaft	2.1. Fit access ladders securely in shaft in accordance with shaft conditions and code of practice 2.2. Install hoisting equipment at the surface of the shaft 2.3. Ensure that services supply devices to the shaft wall are fixed away from shaft conveyance equipment 2.4. Install shaft protection to prevent falls by people and animals, and unauthorised entry into the mine 2.5. Ensure that access shaft is free of unnecessary equipment and fixtures to allow unrestricted movement of materials

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 install underground shafts:

- apply legislative, organisation and site requirements and procedures for installing underground shafts
- apply operational safety requirements
- install secondary support devices
- assess and address hazards
- maintain records
- identify faults
- apply environmental constraints
- dispose of environmentally sensitive fluids and materials

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 install underground shafts:

- assessment of mine ground conditions
- shaft location and types
- shaft excavation methods and equipment
- safety requirements for shaft excavation
- legislative requirements for shaft excavation and use
- services installed in mine shaft
- fitting and locating services in shaft
- shaft protection methods
- pillar design and configuration
- emergency procedures
- environmental requirements

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 installing underground shafts • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of installing underground shafts • working with others to undertake and complete the installation of underground shafts that meets all of the required outcomes • consistent timely completion of underground shaft installation 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 installation of underground shafts
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, conditions and procedures • mine requirements • manufacturer's guidelines and specifications • Australian standards • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
A shaft is a vertical opening from the surface to the underground workings	
Type of shafts may include:	• square • rectangular • oval • circular
Shaft excavation may be carried out by:	• drilling rigs • hand tools • hand drilling and blasting
Stabilisation of unconsolidated ground may include:	• timber • corrugated iron • tubing • concrete ring
Inspections may include those for:	• cracks • strata separation • other structural faults
Pillars are the primary means of roof support required to hold up the mass of ground between the underground mine workings and the surface and may be:	• randomly spaced • regularly spaced • square • rectangular • round
Services may include:	• water pipes • compressed air lines

	• hydraulic systems and equipment • electric cabling • communication wires • ventilation ducting
Shaft protection may include:	• extending collar sleeve above ground level • installing gate • providing a fenced enclosure • installing warning signs

Unit Sector(s)

Metalliferous Mining (Small Mines)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.