RIIERR309A Establish and operate from fresh air base

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers establishing and operating from fresh air base in underground metalliferous mines. It includes: preparing to establish, establishing and operating from fresh air bases.

Application of the Unit

This unit is appropriate for those working in operational roles, in underground mines, 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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to establish fresh air base	1.1. Access, interpret and apply *compliance documentation* relevant to establishing and operating from *fresh air base* in underground metalliferous mines
	1.2. Develop strategy for the establishment of the fresh air base
	1.3. Analyse mine plans, characteristics, data and reports to locate and assess potential affected zones
	1.4. Confirm effected fresh air zones through *atmospheric testing*
	1.5. Identify and organise/obtain *fresh air base resources*
	1.6. Check all fresh air base resources for correct, safe operation to manufacturer's specifications and mine requirements
	1.7. Check selected testing and monitoring instruments for correct operation to manufacturer's specifications and mine requirements
	1.8. Appoint fresh air base personnel with required competence
2. Establish the fresh air base	2.1. Transport to and install all allocated fresh air base resources
	2.2. Test site gas levels to ensure they are within specified limits
	2.3. Inspect roof, sides and floor for stability and safety
	2.4. Install *monitoring equipment* in appropriate locations
	2.5. Monitor atmosphere to maintain integrity of fresh air base in event of atmospheric changes
	2.6. Maintain fresh air base in respirable air
	2.7. Ensure escape strategy and equipment are available to enable fresh air base personnel to effect escape in emergency conditions
	2.8. Install *communication* equipment in fresh air base and test for effective, clear and reliable operation

3. Operate from fresh air base	3.1. Monitor atmosphere to ensure compliance with designated limits and *log* at recommended intervals
	3.2. Communicate *atmosphere conditions to Incident Control* for *instructions*
	3.3. Relocate fresh air bases if atmosphere becomes outside designated limits
	3.4. Inform rescue team of fresh air base relocation and reason for decision to relocate
	3.5. Control and monitor rescue team activities and movements to ensure team safety, duty of care and team tasks are achieved
	3.6. Make available and keep all fresh air base equipment in a state of readiness for use in case of emergency
	3.7. Brief, equip, check, log and dispatch rescue team to meet rescue operations requirements
	3.8. Coordinate and control *ancillary personnel* and operations working from fresh air base
	3.9. Maintain communications with teams and Incident Control to ensure safety of rescue teams and fresh air base personnel
	3.10. Carry out handover briefings to ensure continuity of operations and team safety by oncoming personnel

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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 in this unit, particularly for the application in the various circumstances in which this unit may be applied. This includes the ability to carry out the following as required to establish and operate from fresh air base in underground metalliferous mines:

- apply legislative, organisation and site requirements and procedures
- work as a team member
- apply procedures to assess a situation and make effective, safe decisions
- plan and apply contingency plans
- apply basic life support
- read mine plans and orientate in the underground mine
- apply requirements and procedures for locating and setting up a fresh air base
- use communications and signals
- establish search patterns and mark underground routes
- identify ground conditions
- brief and de-brief team members and Incident Control
- apply report writing techniques
- apply risk assessments processes
- select and use appropriate PPE
- apply procedures for the use of escape and relevant breathing apparatus
- read and interpret mine plan symbols
- apply procedures for monitoring and interpreting atmospheric conditions

Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly its application in a variety of circumstances in which the unit may be used. This includes knowledge of the following, as required to establish and operate from fresh air base in underground metalliferous mines:

- role and responsibilities of the fresh air base controller
- standby / emergency procedures for fresh air base
- entrapment procedures
- underground environment
- underground transport systems
- ignition sources
- gas testing and monitoring instruments - types, limitations, function and operation
- types of fire and fire control methods
- detection, effects and contingencies with explosions
- call-out procedures

- equipment requirements for rescue operations
- rescue team procedures and equipment
- standby/emergency procedures for fresh air base
- effects on people working in hot and humid atmospheres
- atmospheric monitoring
- types of breathing apparatus, their construction, operating principles and limitations
- factors affecting oxygen / air consumption
- fresh air base procedures and communications
- structure, role and responsibilities of Incident Control
- extrication methods
- ground support types and construction

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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 establishing and operating from fresh air base in underground metalliferous mines • implementation of requirements, procedures and techniques for the safe, effective and efficient establishing and operating from fresh air base in underground metalliferous mines • working with others to establish and operate from fresh air base in underground metalliferous mines that meets all of the required outcomes • consistent timely establishing and operating from fresh air base in underground metalliferous mines 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. • 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.
	• Assessment of this competency requires typical resources normally used in the work environment. Selection and use of resources for particular worksites may differ due to site circumstances.
	• 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
	• consistently achieving the required outcomes
	• first hand testimonial evidence of the candidate's:
	• working with others to establish and operate from fresh air base in underground metalliferous mines
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, organisation and site requirements and procedures - manufacturer's guidelines and specifications - Australian standards - code of practice - Employment and workplace relations legislation - Equal Employment Opportunity and Disability Discrimination legislation
Fresh air base may be defined as:	a continuously monitored station for dispatch or return of rescue teams in close proximity to irrespirable zones in known fresh air
Atmospheric testing may include:	- hand-held instruments - tube detectors - telemetric remote sampling
Fresh air base resources may include:	- tradespeople - doctors - paramedics - clergy - gas monitoring - communications - technicians - mine officials
Monitoring equipment refers to portable:	- electronic / chemical instruments - ventilation measuring instruments
Communications may include:	- telephones - radios - runners 2-way radio - computer
Information may be **logged** by:	- log books - duty cards - tape recorder

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Atmosphere conditions may include:	- temperature - humidity - noise - gas levels - dust air-borne contaminations
Incident Control:	has overall planning, approval and control of an incident
Instructions may include:	- tradespeople - doctors - paramedics - clergy - gas monitoring - communications - technicians - mine officials
Ancillary personnel may include:	- tradespeople - doctors - paramedics - clergy - gas monitoring - communications - technicians - mine officials

Unit Sector(s)

Emergency Response and Rescue

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.

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