



Australian Government

Department of Education, Employment and Workplace Relations

RIINHB318A Install and operate water and gas control equipment

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the installation and operating of water and gas control equipment in underground coal mines. It includes planning and preparing for the installation and operation of water and gas control equipment; installing and operating water and gas control equipment; and carrying out maintenance and housekeeping.

Application of the Unit

Water and gas control equipment is part of the in-seam directional drilling process in underground coal mining operations. This unit is appropriate for those working in underground in-seam directional driller roles, at worksites within:

- Coal mining
- Drilling

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 for the installation and operation of water and gas control equipment	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Access, clarify and apply the specific task requirements for the installation and operation of water and gas control equipment 1.3. Identify workplace hazards, assess, maintain control and report associated risks in accordance with required procedures 1.4. Resolve coordination requirements with others at the site prior to commencing and during work activities for the safe effective and efficient execution of the work 1.5. Prepare and maintain a job plan, in consultation with relevant team members, which makes best use of the available resources and meets the task requirements
2. Prepare for the installation and operation of water and gas control equipment	2.1. Select the appropriate water and gas control equipment to meet the requirements of the configuration 2.2. Inspect the water and gas control equipment components for serviceability 2.3. Arrange the delivery of all equipment required for the installation and operation of the water and gas control equipment to the worksite 2.4. Ensure that the drill hole is deep enough to house the down-hole components and adjust depth as necessary 2.5. Insert the down-hole components into the standpipe 2.6. Separate the rod string, leaving sufficient distance between the rod clamp and standpipe (or other attachments) to install the stuffing box
3. Install water and gas control equipment	3.1. Install the control valve, applying appropriate securing method 3.2. Install the 'T' piece, applying appropriate securing method 3.3. Install the stuffing box, applying

	appropriate securing method 3.4. Pack and secure the seal in accordance with requirements and procedures
4. Operate the water and gas control equipment	4.1. Monitor the water and gas control equipment and ensure its correct operation 4.2. Rectify water and gas control equipment operational problems 4.3. Isolate the water and gas control equipment in the event of line failure 4.4. Apply site environmental controls
5. Carry out maintenance and housekeeping	5.1. Inspect and fault-find all water and gas control equipment 5.2. Remove and replace defective components 5.3. Maintain and leave the work area in a safe, clean and tidy condition 5.4. maintain and complete all reports as required

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 install and operate of water and gas control equipment:

- apply legislative, organisation and site requirements and procedures
- interpret project site geological, hydrological, engineering survey information
- interpret project plans, drawings and specifications
- interpret data and test results
- identify water and gas control equipment components
- interpret drill plans
- interpret water and gas control equipment configuration requirements
- operate ancillary equipment, including:
 - communications equipment,
 - ventilation equipment
 - gas drainage conduits and equipment, and
 - separator tanks
- apply gland packing requirements and procedures
- choose appropriate equipment and fasteners for the installation of water and gas control equipment
- choose appropriate operational techniques for the operation of water and gas control equipment
- calculate quantities for the installation and operation of water and gas control equipment, including:
 - volumes
 - grades
 - percentages
 - resource consumption figures
- determine task resource requirements
- schedule activities and materials delivery
- draft and administer job plans
- implement work zone traffic management plans
- prepare for and conduct briefings, toolbox and site meeting
- prepare job reports
- prepare and maintain log books and diaries
- provide team leadership

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 install and operate of water and gas control equipment:

- applicable geology types
- principles of underground in-seam directional drilling operations
- possible variations in water and gas control equipment required in possible situations
- relevant regulations and codes

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 the installation and operating of water and gas control equipment • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the installation and operating of water and gas control equipment • working with others to undertake and complete the installation and operating of water and gas control equipment that meets all of the required outcomes • consistent timely completion of the installation and operating of water and gas control equipment 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 undertake and complete the installation and operating of water and gas control equipment
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 • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Specific task requirements may include:	• configuration of the water and gas control equipment • drill plan, which may include: • hole location, dip and direction • hole sizes • site geology • standpipe requirements and configuration
Workplace hazards may include:	• mining equipment • roof and rib spalls • the presence of gases and water
Coordination requirements may include communication with:	• mine operational personnel • mine supervisory and management staff • mine maintenance personnel • drill team members • regulators representatives • visitors
Job plan may include:	• human resource requirements • plant and machinery requirements • sub-contractor support requirements • waste disposal requirements • coordination requirements • activity scheduling • materials delivery scheduling • risk assessment and management requirements • occupational health and safety requirements

	• quality management requirements, including testing scheduling requirements • traffic management requirements • environmental requirements • task monitoring requirements • task performance monitoring requirements • communication requirements • reporting requirements
Team members may include:	• other members of the organisation's management team • suppliers representatives • mine site representatives • sub-contractors representatives • supervisors or managers of other organisations who are involved in related tasks • members of the team directly involved in the task
Configuration will include:	• standpipe, • gate valve, • 'T' piece, • stuffing box, which may be either: • NQ gauge • HQ gauge • four inch hose and • gas and water separator • and may include: • 2 inch, 4 inch, or 6 inch connections
Securing method may include:	• flanged joints, or • victaulic joints
Correct operation will include:	• leaks limited to specification • water flowing from the 'T' piece • water flowing to the fines tank • valves are serviceable • free movement of drill rods
Rectifying operational problems is to include:	• adjusting equipment • tightening fasteners, and • replacing non serviceable items
Isolate is to include:	• withdrawing the drill rods and • shutting off the control valve

Unit Sector(s)

Drilling (General)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.