



Australian Government

Department of Education, Employment and Workplace Relations

RIINHB319A Install de-watering conduit and gas drainage equipment

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the installation of de-watering conduit and gas drainage equipment in the coal mining industry. It includes planning and preparing for installation of de-watering conduit and gas drainage equipment; installing de-watering conduit and monitoring water drainage; connecting gas drainage equipment and monitoring gas drainage; and maintaining equipment and housekeeping.

Application of the Unit

De-water conduits and gas drainage equipment is used in underground coal mining operations to de-water and drain gas from coal seams. 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 and prepare for installation of de-watering conduit and gas drainage 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 the de-watering conduit installation plan in consultation with the site gas drainage official and in accordance with appropriate site management plans
2. Install de-watering conduit and monitor water drainage	2.1. Insert hollow rods into the hole in accordance with the de-watering conduit installation plan 2.2. Attach non-return valve and anchor onto the de-watering conduit in accordance with the installation plan 2.3. Perforate the conduit at the appropriate locations to allow ingress of water in accordance with the installation plan 2.4. Install the de-watering conduit into hollow rod to the required distance in accordance with the installation plan 2.5. Identify and remedy operational problems 2.6. Remove hollow rods leaving conduit in place 2.7. Connect conduit to de-watering system and commence removing water via the water trap in accordance with mine-site procedures 2.8. Empty water trap as required by mine-site procedures 2.9. Disconnect de-watering equipment from the de-watering conduit when all water has

	been removed 2.10. Monitor, record and interpret all pressure and flow readings in accordance with mine-site requirements 2.11. Maintain communication with all relevant personnel
3. Connect gas drainage equipment and monitor gas drainage	3.1. Select and install appropriate gas drainage equipment in accordance with the site gas management plan 3.2. Select and use appropriate measuring equipment to monitor gas drainage in accordance with the site gas management plan 3.3. Correctly identify and tag gas drainage and monitoring units identifying the number, length and diameter of the hole
4. Maintain equipment and housekeeping	4.1. Ensure that the drill rods are inspected for wear and damage and that threads are dressed and greased in accordance with standard procedures or that rods are replaced as required 4.2. Monitor all drill equipment and hoses and ancillary equipment and carryout remedial action 4.3. Apply health, safety and environmental controls 4.4. Maintain safe and tidy site for the duration and at the conclusion of the job 4.5. Ensure all drilling equipment is cleaned and maintained

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 de-watering conduit and gas drainage equipment:

- apply legislative, organisation and site requirements and procedures
- apply planning skills
- apply safe manual handling practices
- apply drill rig operating requirements and procedures
- apply operational communication procedures
- apply inspection and monitoring procedures
- apply maintenance procedures
- interpret drill plans
- operate ancillary equipment including communications equipment, computer equipment, pumps, ventilation equipment, separator pods and fluid mixers

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 de-watering conduit and gas drainage equipment:

- legislative, organisation's and site OHS requirements
- potential underground directional drilling hazards
- potential de-watering and gas drainage operations hazards
- potential work place hazards
- potential underground environmental hazards
- principles of de-watering drill holes and gas drainage
- organisations operational requirements and procedures
- manufacturer's requirements and procedures
- specific handling requirements for dewatering and gas drainage equipment
- housekeeping requirements and procedures
- importance and functions of the standpipe

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 of de-watering conduit and gas drainage equipment • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the installation of de-watering conduit and gas drainage equipment • working with others to undertake and complete the installation of de-watering conduit and gas drainage equipment that meets all of the required outcomes • consistent timely completion of the installation of de-watering conduit and gas drainage 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 of de-watering conduit and gas drainage 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:	• nature and scope of tasks, • specifications • quality of finished works • achievement targets • operational conditions • obtaining of permits required • site layout • out of bounds areas • worksite inspection requirements • lighting conditions • plant or equipment defects • hazards and potential hazards • coordination requirements or issues • contamination control requirements • environmental control requirements • barricade and signage requirements
Workplace hazards may include:	• mining equipment • roof and rib spalls • the presence of gases and water
Coordination requirements may include:	• gas drainage official • drill rig team • operators of other equipment • maintenance personnel • supervisors • mine personnel

De-watering conduit installation plan may include:	• size and length of the hollow rods • size and length of the conduit • anchor and non-return valve type, location and connection requirements • dewatering locations and perforation requirements
Operational problems may include:	• changing geological formations, particularly clay, rock or unstable or porous formations • loss of air or water volume or pressure • equipment failure • bogging or parting of rod string • reliability of communications
Relevant personnel may include:	• drill crew members • mine staff and supervisors • site safety personnel • statutory persons
Ancillary equipment may include:	• pumps • water disposal lines and • ventilation equipment
Remedial action may include:	• clear or remove obstructions • replace damaged hoses • top-up lubricants

Unit Sector(s)

Drilling (General)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.