



Australian Government

Department of Education, Employment and Workplace Relations

RIINHB317A Install underground in-seam directional drilling standpipes

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the installing of underground in-seam directional drilling standpipe in underground coal mines. It includes planning and preparing for the installation; performing rib consolidation; drilling and reaming hole and install standpipe; and maintaining equipment and housekeeping.

Application of the Unit

Underground in-seam directional drilling is conducted for gas extraction and water drainage, barrier proving and exploration 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 and prepare for the installing underground in-seam directional drilling standpipe	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Obtain, confirm and apply work instructions for the allocated task 1.3. Identify, manage and report all potential hazards 1.4. Resolve coordination requirements with others at the site prior to commencing and during work activities
2. Perform rib consolidation	2.1. Prepare for rib consolidation drilling in accordance with the drill plan 2.2. Carry out rib consolidation drilling in accordance with the drill plan 2.3. Monitor and adjust drilling technique according to conditions 2.4. Identify and remedy operational problems 2.5. Insert and seal grouting tubes into rib consolidation holes in accordance with the rib consolidation drill plan 2.6. Inject grout through the grouting tubes until visible evidence that grout has migrated into any coal rib fractures or cracks. 2.7. Carryout individual grouting completion procedure .
3. Drill and ream hole and install standpipe	3.1. Prepare for drilling and reaming in accordance with the drill plan 3.2. Choose drill bit and reamer appropriate to the geology 3.3. Carry pilot hole drilling and ream standpipe hole in accordance with the drill plan 3.4. Monitor and adjust drilling technique according to conditions 3.5. Identify and remedy operational problems 3.6. Prepare and install standpipe in accordance with the drill plan 3.7. Grout in standpipe in accordance with the drill plan 3.8. Maintain communication with all relevant

	<i>personnel</i>
4. Maintain equipment and housekeeping	4.1. Monitor the drill rods for wear and damage and dress and grease threads in accordance with standard procedures or replace rods as required. 4.2. Monitor all drill equipment and hoses and <i>ancillary equipment</i> and carryout <i>remedial action</i> 4.3. Apply environmental controls 4.4. Maintain safe and tidy site for the duration and at the conclusion of the job 4.5. Clean and maintain all grouting 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 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 underground in-seam directional drilling standpipe:

- apply legislative, organisation and site requirements and procedures
- apply safe manual handling practices
- operate hand borers
- operate drill rig
- operate grouting equipment
- apply operational communication procedures
- apply inspection and monitoring procedures
- apply maintenance procedures
- interpret drill plans

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 underground in-seam directional drilling standpipe:

- legislative, organisation's and site OHS requirements
- potential underground directional drilling hazards
- potential work place hazards
- potential underground environmental hazards
- principles of underground in-seam directional drilling operations
- organisations operational requirements and procedures
- manufacturer's requirements and procedures
- specific handling requirements for underground drilling equipment
- housekeeping requirements and procedures
- basic geology types and their impact on underground in-seam directional drilling operations
- appropriate drill bits for different geology types
- appropriate reamers for different geology types
- 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 underground in-seam directional drilling standpipe • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the installation of underground in-seam directional drilling standpipe • working with others to undertake and complete the installation of underground in-seam directional drilling standpipe that meets all of the required outcomes • consistent timely completion of the installation of underground in-seam directional drilling standpipe 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 underground in-seam directional drilling standpipe
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
Work instructions may come from briefings, handovers, plans and work orders and may be written or verbal, formal or informal and 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
Hazards may include:	• mining equipment • roof and rib spalls • the presence of gases and water • release of gases or water from formation • spread of contaminants as a result of drilling or cleaning processes • working in proximity to drilling rig • use of high air or hydraulic pressure for drilling operations • entanglement in rotating pipes

	• string makeup and breakout hazards
Coordination requirements may include:	• drill team • other equipment operators • maintenance personnel • supervisors • mine personnel
Drill plan may include:	• rib consolidation hole pattern • standpipe location, dip and direction • hole sizes • hole depths • diameter, length and type of standpipe
Drilling technique may include:	• applied feed pressure • rotational speed • regulation of water pressure and volume
Conditions may include:	• variations in geology, including: • consistency of the coal • presence of stone (e.g. shale, sandstone) • presence of clay • water and gas emissions from the drill face • variations in environmental conditions (e.g. ventilation)
Operational problems may include:	• loss of air or water volume or pressure • equipment failure • bogging or parting of rod string • reliability of communications
Grouting completion procedure includes:	• stop pumping of grout when grout is visible • relieve pressure from the pump and grout lines, and • disconnect grout pump from tubing
Drill bits and reamers may include:	• PCD bits • Tri-cone rock bits • Tungsten bits
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
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Unit Sector(s)

Drilling (General)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.