



Australian Government

Department of Education, Employment and Workplace Relations

RIIMCU506A Implement strata management plan

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the implementation of strata management plans in the coal industry. It includes planning and preparing for the implementation of the strata management plan, implementing the strata management plan, and auditing and reviewing the effectiveness of the strata management plan. 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 a management or supervisory role at worksites within:

- Coal 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. Plan and prepare for the implementation of the strata management plan	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Identify and communicate the roles and responsibilities, as specified in the strata management plan 1.3. Identify, forecast, schedule and record resources required for the implementation of the strata management plan 1.4. Identify training needs 1.5. Identify and interpret the risks associated with unstable mining structures
2. Implement the strata management plan	2.1. Implement the system of mining in accordance with the strata management plan 2.2. Communicate primary, secondary and other support requirements in accordance with the strata management plan 2.3. Implement and communicate mining sequences in accordance with the strata management plan 2.4. Obtain resources and allocate in accordance with the strata management plan 2.5. Implement the strata management plan training requirements 2.6. Implement the maintenance program in accordance with the strata management plan 2.7. Implement the strata monitoring and testing system in accordance with the strata management plan 2.8. Monitor procedures in accordance with the strata management plan 2.9. Implement reporting and recording systems in accordance with the strata management plan and legislative requirements 2.10. Implement the emergency response and evacuation plan
3. Audit and review the effectiveness of the strata	3.1. Audit stable structure controls for compliance with legislative and strata

management plan	management plan specifications 3.2.Audit the strata monitoring and testing systems in accordance with legislative and the strata management plan 3.3.Audit recording and reporting systems in accordance with legislative and site requirements 3.4.Audit system maintenance program and procedures in accordance with legislative and site requirements 3.5.Audit the strata management training plan for currency, relevance and compliance with the strata management plan
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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 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 implement the strata management plan:

- apply legislative, organisation and site requirements and procedures for implementing the strata management plan
- access, interpret and apply technical information relating to strata management
- access and analyse historical strata management information related to mine and failure mode of mine structures
- interpret and apply design criteria for strata management
- communicate effectively in the workplace
- prepare operating procedures relating to strata management
- conduct and report on audits
- identify and evaluate geological and geotechnical information

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 implement the strata management plan:

- legislative and site requirements for mining structures, including mine plans, ventilation, gas monitoring, strata support and safety management plans
- the systems of mining, including tunnels, drifts, stone drivage, shaft sinking, pillar extraction, partial extraction, punch mining, longwall mining (including installation and recovery), the use of breaker line support and fault drivage
- stress including mining induced stress, vertical and horizontal stress, tectonics, and topographical features
- sedimentology, including subsidence, water bearing strata, permeability of seam and strata, hydrology, rock property testing, caving characteristics, windblast, outburst, gas content and over and underlying strata
- systems of work, including bord and pillar, place changing, longwall, highwall, auger mining, pillar extraction, partial extraction, the use of breaker line support and punch mining
- mining structure failure modes
- exploration techniques
- geology and strata gas characteristics
- mining engineering principles
- lithology

- strata support and monitoring systems
- audit methodologies
- site document control requirements
- mine site historical information
- limitations and controls

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 implementing the strata management plan • implementation of procedures and techniques for the safe, effective and efficient implementation of the strata management plan • the identification of the relevant information and scope of the work required to meet the required outcomes • the identification of viable options and the selection of strata management plan elements that best meet the required outcomes • working with others to undertake and complete the implementation of the strata management plan • consistent successful implementation of the strata management plan
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 to apply in undertaking of the implementation of the strata management plan • 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 • identification of the relevant information and scope of the work required to meet the required outcomes • identification of viable options and the selection of strata management plan elements that best meet the required outcomes • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the implementation of the strata

	management plan • provision of clear and timely required support and advice on the implementation of the strata management plan
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 • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
Interpret is defined as: the understanding needed by the person within their job role.	
Resources may include, but are not limited to:	• skilled personnel • roof and rib supports • face equipment • power water / gas drainage systems • strata monitoring devices • Standard Operating Procedures (SOP) • training materials
Risk is defined as: <i>the chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood</i> (definition from AS/NZS 4360:1999 Risk Management).	
Mining structure can be defined as:	• excavation • pillars • roadways • workings • roof, rib and floor
Strata monitoring devices may include:	• convergence indicators • telltales • extensometer • load cells

	• stress cells
Factors effecting stability of mining structures may include:	• roadway size • pillar sizes • depth of cover • strength of coal and underlying / overlying strata • stress regimes • strata characteristics • longwall chocks • presence of water • systems of mining • breaker line supports • direction of mining • primary and secondary support • geological structures • speed and continuity of extraction
Controls may include:	• restriction of access • setting of temporary and remedial supports • monitoring and reporting • procedures under the strata management plan
Audit is defined as: <i>a systematic examination against defined criteria to determine whether activities and related results conform to planned arrangement, and whether these arrangements are implemented effectively and are suitable to achieve the organisation's policy and objectives (AS/NZS 4804: 2001).</i>	
Mine design is the process of engineering analysis applied to the systems and sequences involved in mining.	
Hazard is defined as: <i>a source of potential harm or a situation with a potential to cause loss (definition from AS/NZS 4360:1999 Risk Management).</i>	
Standard operating procedures (SOP) are also known as safe working procedures, safe operating	

procedures and standard working procedures.	
Mining systems and methods may include, but are not limited to:	• bord and pillar • longwall • highwall • place changing • auger mining • pillar extraction • partial extraction • punch mining
Stress includes, but is not limited to:	• horizontal and vertical tectonic induced stress • mining induced stress • topographical features • stress environment
Geological and hydrology information may be related, but not limited, to:	• subsidence • roof and floor technical data • gas content • over and underlying strata • water bearing strata • permeability of seam and strata • physical properties • caving characteristics • outburst • windblast • faults • intrusions • deformities
Mine site historical information may include, but not limited to:	• existence of previous workings within the work seam or other seam • sedimentology aspects of the mine site relating to subsidence • outburst • gas content/gas composition • roof and floor technical data • over and underlying strata • water bearing strata • permeability of seam and strata • hydrology • rock property testing results • caving characteristics • windblast

	• adjacent coal seams
Mine design may include in whole or in part requirements relating to:	• mine plant • mining induced stress • ventilation • tunnels • sequencing drivages • stone drivage • shaft sinking • pillar extraction • partial extraction • punch mining • modelling • seam grades • windblast • outburst • geology • gas drainage • multi-seams • fault drivage • spontaneous combustion • roof and floor technical data • over and underlying strata • subsidence • legislative requirements
Mine gases may be seam gases or gases from other introduced sources and may include:	• methane • carbon dioxide • carbon monoxide • oxides of nitrogen • hydrogen • sulphur dioxide • hydrogen sulphide • hydrocarbons • combinations
Coal seam characteristics may include, but are not limited to:	• rank • petrology • moisture • cleat • coal hardness • seam gas • friability • pyrites

	<i>Or depositional factors such as:</i> • seam thickness • multiple and rider seams • seam dip • depth of cover
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Unit Sector(s)

Coal Mining (Underground)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.