



Australian Government

Department of Education, Employment and Workplace Relations

RIIMCU407A Apply and monitor the strata management plan

Release: 1

RIIMCU407A Apply and monitor the strata management plan

Modification History

Not applicable.

Unit Descriptor

This unit covers the application and monitoring of the strata management plan in the coal industry. It includes planning and preparing for the application of the strata management plan, applying the strata management plan, and applying monitoring and maintenance procedures. 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 supervisory role or as a technical specialist, 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 application of the strata management plan	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Communicate and explain work group and individual roles, responsibilities and tasks 1.3. Identify obtain and allocate resources required for the application of the strata management plan 1.4. Identify individual training needs. 1.5. Identify and interpret the risks associated with unstable mining structures
2. Apply the strata management plan	2.1. Communicate, apply and monitor site mining system in accordance with the strata management plan 2.2. Communicate and apply primary, secondary and other support systems in accordance with the strata management plan 2.3. Identify and assess the impact of mining on the stability of mining structures in accordance with the strata management plan 2.4. Install, monitor and assess strata support systems 2.5. Install, monitor and assess strata monitoring devices 2.6. Identify and assess strata supports and failure mechanisms and apply appropriate controls 2.7. Apply, monitor and record mining sequences in accordance with the strata management plan 2.8. Identify and assess and record stress changes in the mining structure 2.9. Identify, assess and record geological structures encountered during the mining process 2.10. Apply action response plans in accordance with site requirements 2.11. Apply and monitor site procedures relating to strata management 2.12. Participate in audit and review

	requirements in accordance with the strata management plan
3. Apply monitoring and maintenance procedures	3.1. Carry out inspection to ensure that repair and maintenance activities are conducted in accordance with strata management plan 3.2. Record, report and review maintenance and monitoring requirements and activities in accordance with strata management plan

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 apply and monitor the strata management plan:

- apply legislative, organisation and site requirements and procedures for applying and monitoring the strata management plan
- access, interpret and apply technical information
- access and analyse historical strata management information related to the mine and failure mode of mine structures
- interpret and apply design criteria for strata management
- communicate effectively in the workplace
- apply operational procedures relating to strata management
- conduct and report on audits
- identify and evaluate fundamental 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 apply and monitor 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 underground mining, including tunnels, drifts, stone drivage, shaft sinking, pillar extraction, partial extraction, punch mining and fault drivage
- stress, including mining induced stress, vertical and horizontal stress, tectonics, virgin stress, topographical features
- sedimentology, including subsidence, water bearing strata, permeability of seam and strata, hydrology, rock property testing, caving characteristics, windblast, faults, dykes, outburst, gas content and over and underlying strata
- systems of work, including bord and pillar, place changing, longwall, highwall, auger mining, pillar extraction, partial extension and punch mining
- mining structure failure modes
- exploration techniques
- geology and strata gas characteristics
- strata support and monitoring systems
- audit methodologies
- historical information
- training systems

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| <ul style="list-style-type: none">• emergency response and evacuation planning processes and techniques |
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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 applying and monitoring the strata management plan • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of strata management plan application and monitoring • working with others to plan, prepare and conduct strata management plan application and monitoring • evidence of the consistent successful strata management plan application and monitoring
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 • 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 • consistent achievement of required outcomes • first hand testimonial evidence of the candidate's: • working with others to undertake and complete the strata management plan application and monitoring • provision of clear and timely instruction and supervision by the individual of those involved in the conduct of the strata management plan application and monitoring
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
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 • extensometers • load cells • stress cells
Factors affecting stability of	• roadway size • pillar sizes

mining structures may include:	• 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 • sequence of pillar extraction • primary and secondary support • geological structures • speed and continuity of extraction
Appropriate controls may include:	• restriction of access • setting of temporary and remedial supports • monitoring and reporting
Stress includes, but is not limited to:	• horizontal and vertical tectonic induced stress • mining induced stress • topographical features • virgin stress environment
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
Geological and hydrogeological 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
Mine site historical information may include, but is 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
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
Coal seam characteristics may include, but are not limited to:	• 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

Unit Sector(s)

Coal Mining (Underground)

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.