



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **RIISRM502A Design stockpile formations and reclaiming systems**

**Release: 1**

## RIISRM502A Design stockpile formations and reclaiming systems

### Modification History

Not applicable.

### Unit Descriptor

This unit covers designing of stockpile formations and reclaiming systems in the metalliferous mining industry. It includes: identifying stockpile requirements; designing the stockpile configuration; and monitoring stockpile operations.

### Application of the Unit

This unit is appropriate for those working in a management or technical specialist role, within:

- Metalliferous 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. Identify stockpile requirements	1.1. Access, interpret and apply <b><i>compliance documentation</i></b> relevant to the designing of stockpile formations and reclaiming systems 1.2. Identify <b><i>stockpiling requirements</i></b> 1.3. Evaluate economics and efficiency of the stock piling <b><i>system</i></b> and configuration to be used 1.4. Identify and implement statutory requirements for locating of plant and stockpile
2. Design stockpile configuration	2.1. Design <b><i>stockpile configuration</i></b> with appropriate drainage system 2.2. Design reclaim systems to match stockpile configuration 2.3. Match load mechanisms to stockpile requirements 2.4. Design and install dust control measures to ensure correct operations 2.5. <b><i>Plan</i></b> , organise and supervise safety requirements associated with the operation and machine movements
3. Monitor stockpile operations	3.1. Instruct operators on the outcomes required including Occupational Health & Safety issues and safe work procedures 3.2. Monitor stockpiling operation including surveying, forming, order or dumping, ramp 3.3. Monitor material removal from stockpile in accordance to Quality Assurance specifications 3.4. Assess and reconcile stock quantities

## 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 design stockpile formations and reclaiming systems:

- apply legislative, organisation and site requirements and procedures
- apply procedures for managing people and processes
- apply requirements for preparing capital equipment proposals
- apply procedures for analysing and reviewing stockpile operations and costs
- apply procedures for managing projects and tasks
- apply procedures for coordinating resources - human, financial and physical
- apply requirements for delivering and maintaining services to required specifications
- apply procedures for managing surface mining traffic
- apply procedures for managing equipment and maintenance systems
- apply techniques for evaluating new and used equipment
- apply operating costs control requirements
- apply procedures for gaining statutory/legal approvals
- apply tender specifications preparation requirements
- apply contract negotiation and finalisation techniques and requirements
- access and use technologies
- apply requirements for preparing and presenting management reports
- apply procedures for negotiating with internal/external customers, community and statutory/legal authorities
- apply conflict resolution techniques

### 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 design stockpile formations and reclaiming systems:

- metalliferous mine operations
- metalliferous mine products and services
- stockpile design
- stockpile configuration
- reclaim systems design and configuration
- team management
- quality system

- development, administration and review of procedures that apply to the system
- stockpile formation and reclaiming systems' design and functionality
- statutory control
- organisational objectives
- surveying
- risk management: principles, strategies and applications
- customer/client relations
- environmental management
- OHS
- computer applications
- negotiation techniques

## Evidence Guide

<p>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.</p>	
<p><b>Overview of assessment</b></p>	
<p><b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b></p>	<p>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:</p> <ul style="list-style-type: none"> <li>• knowledge of the requirements, procedures and instructions for the design of stockpile formations and reclaiming systems</li> <li>• implementation of procedures and techniques for the safe, effective and efficient design of stockpile formations and reclaiming systems</li> <li>• the identification of the relevant information and scope of the work required to meet the required outcomes</li> <li>• the identification of viable options and the selection of options that best meet the required outcomes</li> <li>• working with others to undertake and complete the design of stockpile formations and reclaiming systems</li> <li>• consistent successful design of stockpile formations and reclaiming systems</li> </ul>
<p><b>Context of and specific resources for assessment</b></p>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>

	<ul style="list-style-type: none"> <li>• Customisation of assessment and delivery environment to sensitively accommodate cultural diversity.</li> <li>• Aboriginal people and other people from a non English speaking background may have second language issues.</li> <li>• Assessment of this competency requires typical resources normally used in a civil works environment. Selection and use of resources for particular worksites may differ due to site circumstances.</li> <li>• Where applicable, physical resources should include equipment modified for people with disabilities.</li> <li>• Access must be provided to appropriate learning and/or assessment support when required.</li> </ul>
<p><b>Method of assessment</b></p>	<p>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:</p> <ul style="list-style-type: none"> <li>• written and/or oral assessment of the candidate's required knowledge to apply in undertaking of the design of stockpile formations and reclaiming systems</li> <li>• observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>• implementation of appropriate procedures and techniques for the safe, effective and efficient achievement of the required outcomes</li> <li>• identification of the relevant information and scope of the work required to meet the required outcomes</li> <li>• identification of viable options and the selection of options that best meet the required outcomes</li> <li>• consistently achieving the required outcomes</li> </ul> </li> <li>• first hand testimonial and documentary evidence of the candidate's: <ul style="list-style-type: none"> <li>• working with others to undertake and complete the design of stockpile formations</li> </ul> </li> </ul>

	<p>and reclaiming systems</p> <ul style="list-style-type: none"><li>• provision of clear and timely required support and advice on the implementation of stockpile formations and reclaiming systems</li></ul>
<b>Guidance information for assessment</b>	Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.



## Range Statement

<p>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.</p>	
<p><b>Relevant compliance documentation</b> may include:</p>	<ul style="list-style-type: none"> <li>• legislative, organisation and site requirements and procedures</li> <li>• manufacturer's guidelines and specifications</li> <li>• Australian standards</li> <li>• code of practice</li> <li>• Employment and workplace relations legislation</li> <li>• Equal Employment Opportunity and Disability Discrimination legislation</li> </ul>
<p><b>Stockpiling requirements</b> may include:</p>	<ul style="list-style-type: none"> <li>• heap leaching surge stocking</li> <li>• storage bins</li> <li>• storage of finished products (concentrate)</li> <li>• loading bay storage</li> </ul>
<p><b>System</b> may be defined as:</p>	<ul style="list-style-type: none"> <li>• comprising policy, standards, procedures and tools/protocols</li> </ul>
<p><b>Stockpile configurations</b> may include:</p>	<ul style="list-style-type: none"> <li>• sprinkler systems to keep stockpiles damp to control dust</li> <li>• sprinkler systems for leach gold extraction</li> <li>• method of storing</li> <li>• method of loading</li> <li>• end use size</li> <li>• site modification</li> <li>• access to and from stockpile</li> <li>• material, size, shape</li> <li>• amount to be stored</li> <li>• weather conditions</li> <li>• stockpile floor</li> <li>• segregation</li> <li>• safety of area</li> <li>• reconciliation of stocks/transfers</li> <li>• stockpile identification</li> <li>• reporting</li> </ul>
<p><b>Planning</b> would typically include:</p>	<ul style="list-style-type: none"> <li>• interpreting and communicating information</li> <li>• surveying</li> </ul>

	<ul style="list-style-type: none"><li>• infrastructure/technology requirements and would typically incorporate the following specifications:<ul style="list-style-type: none"><li>• products</li><li>• production rate</li><li>• recyclable materials</li><li>• stack emissions</li><li>• hours per week of operation</li><li>• waste and stockpiles</li><li>• water/tailings management</li><li>• transportation systems</li></ul></li><li>• all weather development drives and openings</li></ul>
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## Unit Sector(s)

Stockpile and Reclaim Material

## Competency field

Refer to Unit Sector(s).

## Co-requisite units

Not applicable.