



Australian Government

Department of Education, Employment and Workplace Relations

RIIPHA301A Conduct milling/grinding

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers the conduct of milling/grinding in the metalliferous mining industry. It includes planning and preparing for milling/grinding processes, starting-up equipment in sequence, operating and monitoring equipment and lubrication systems, monitoring and controlling classification, charging the mill, conducting housekeeping activities, and shutting down in sequence and/or isolating equipment. 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 an operational role at worksites 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. Plan and prepare for milling/grinding process	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Plan and prepare work 1.3. Receive, interpret and clarify shift change over details 1.4. Communicate with other personnel 1.5. Select personal protective equipment appropriate for work activities 1.6. Select appropriate type of auxiliary equipment for work activities 1.7. Perform equipment pre-start checks to ensure equipment is ready for operation 1.8. Identify, address and report potential risks and hazards 1.9. Identify, address and report environmental issues 1.10. Adhere to safe operating procedures 1.11. Adhere to emergency procedures 1.12. Use approved dust suppression and extraction methods 1.13. Ensure area is well ventilated
2. Start-up equipment in sequence	2.1. Carry out start-up procedures and completes start-up checks 2.2. Confirm plant is operational
3. Operate and monitor equipment and lubrication system	3.1. Read and interpret data from equipment indicators 3.2. Continuously inspect plant 3.3. Adjust equipment to optimise plant performance 3.4. Control feed to plant 3.5. Monitor reagent additions 3.6. Monitor lubrication system to ensure that oil and grease levels are maintained 3.7. Carry out operator level maintenance 3.8. Complete all required documentation, clearly, concisely and on time 3.9. Pass on end of shift information to oncoming shift

4. Monitor and control classification	4.1. Check for density and/or size of ore according to specified parameters 4.2. Adjust and calibrate equipment where required to meet density requirements 4.3. Accurately sample and record density of product
5. Charge mill	5.1. Select grinding media type and quantity according to metallurgical requirements 5.2. Charge mill as required
6. Conduct housekeeping activities	6.1. Clean plant 6.2. Manage and report hazards
7. Shut down in sequence and/or isolate equipment	7.1. Clear ore from milling/grinding equipment before commencing shutdown 7.2. Shut down or isolate equipment based on process and safety requirements 7.3. Perform post shut down or isolation checks

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 conduct milling/grinding:

- apply legislative, organisation and site requirements and procedures for conducting milling/grinding
- operate, maintain and clean equipment
- identify and manage hazards
- interpret reports
- apply lifting techniques (manual, cranes and loads)
- maintain records
- employ safe work practices
- use data control systems (DCS)
- use hand and power tools

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 conduct milling/grinding:

- contaminant identification
- cooling system
- emergency procedures
- environmental principles
- equipment processes, limitations and operating parameters
- equipment safety requirements
- grinding media
- hazardous goods procedures and consequences of spills
- isolation procedures
- lubrication system
- metallurgical and technical data
- milling circuit components and functions/milling principles
- operational procedures and checks
- milling and grinding safety requirements
- types of ores

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 conducting milling/grinding • implementation of requirements, procedures and techniques for the safe, effective and efficient completion of milling/grinding • working with others to undertake and complete the conduct of milling/grinding that meets all of the required outcomes • consistent timely completion of milling/grinding 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. • 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 conduct of milling/grinding
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
Personal protective equipment may include:	• chemical/gas detectors • eye protection (e.g. glasses) • hearing protection (e.g. ear plugs) • protection from the elements (e.g. sun block) • protective clothing (e.g. gloves, safety boots, helmet, shin guards, long sleeved shirt and trousers)) • respiratory devices • safety harness when working at heights
Potential risks and hazards may include:	• personal safety (e.g. crush injuries, burns, slips, trips, falls, chemical exposure, fatigue) • plant (e.g. structural damage, emergency shut down) • environment (e.g. seepage, emissions, chemical spills, pollution, anything detrimental to fauna and flora)
Environmental issues may include:	• drainage • dust • emissions • flora and fauna • hazardous chemicals • noise • run-off • spills • waste management and disposal • water quality
Safe operating procedures may	• adhering to all site procedures

include:	• awareness and access to emergency exits • emergency procedures • First Aid procedures • hazard identification and recognition procedures • hot work procedures • observing electrical and mechanical procedures • observing right of way of heavy equipment • observing site speed limits • occupational health safety and environment procedures around equipment, vehicles and personnel • use of 2-way radio • use of barricades and guards • use of fire extinguishers • use of materials safety data sheets (MSDS) • tagging procedures (e.g. service tags, danger tags, restrictive operations tags) • use of respiratory devices • wearing equipment restraints • wearing personal protective equipment • working in confined spaces • use of materials safety data sheets • carrying out safety checks (e.g. safety showers and eye washes) • hold worker access permit
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Unit Sector(s)

Processing

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.