



Australian Government

Department of Education, Employment and Workplace Relations

RIIPHA303A Operate agglomeration circuit

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit covers operating an agglomeration circuit in the metalliferous mining industry. It includes preparing for agglomeration process, starting up agglomeration circuit, operating and monitoring the agglomeration circuit, responding to contingencies, monitoring the quality of agglomerate, and shutting down and maintaining the agglomeration circuit.

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. Prepare for agglomeration process	1.1. Access, interpret and apply compliance documentation relevant to the work activity 1.2. Receive, interpret and clarify shift changeover details 1.3. Check and test remote control and equipment for correct operation 1.4. Select appropriate type of auxiliary equipment for work activities including availability 1.5. Identify, address and report potential risks and hazards 1.6. Identify, address and report environmental issues 1.7. Follow emergency procedures to ensure safety of personnel and plant
2. Start-up agglomeration circuit	2.1. Carry out pre-start checks 2.2. Establish that all agglomeration circuit drives are set to remote and ready for operation 2.3. Ensure that all downstream equipment is operational and ready to receive the agglomerated product 2.4. Ensure that all feed circuits (including specific feed blend requirements) to the agglomeration circuit are available and ready to operate 2.5. Initiate plant operator sequence start
3. Operate and monitor agglomeration circuit	3.1. Read and interpret data from equipment indicators to determine agglomeration circuit efficiencies 3.2. Continuously monitor circuit to identify defects and potential problems 3.3. Adjust equipment within approved operating parameters to optimise performance, maintain efficient agglomeration and to meet product quality targets 3.4. Monitor and adjust the feed rate 3.5. Monitor and control the addition rate of binding agent

	3.6. Monitor and control the dosing rate of leaching solution 3.7. Monitor and control the dosing concentration of leaching solution 3.8. Monitor and adjust the drum speed ratio 3.9. Complete all required documentation clearly, concisely and on time 3.10. Pass on end of shift information to oncoming shift
4. Respond to contingencies	4.1. Respond to alarms 4.2. Clear circuit blockages in accordance with site procedures 4.3. Perform manual start-up of individual items of equipment 4.4. Report maintenance issues as required
5. Monitor quality of agglomerate	5.1. Carry out physical tests to check quality of agglomerate 5.2. Organise laboratory tests to check quality of agglomerate 5.3. Respond to test information
6. Shutdown and maintain of agglomeration circuit	6.1. Initiate circuit shutdown 6.2. Perform post shutdown checks 6.3. Isolate equipment 6.4. Clean agglomeration circuit in preparation for maintenance requirements 6.5. Operate agglomeration drum using local control 6.6. Operate automated lubrication system and perform operator maintenance as required

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 operate an agglomeration circuit:

- apply legislative, organisation and site requirements and procedures for operating agglomeration circuits
- comply with site safety and environmental requirements
- identify, control and report hazards
- identify and report equipment maintenance requirements
- access, interpret and apply technical and safety information
- interpret and apply survey information and plans
- operate relevant plant and machinery
- communicate and coordinate activities with others
- apply diagnostic / fault finding techniques
- operate relevant auxiliary equipment
- maintain appropriate records

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 operate an agglomeration circuit:

- operational safety requirements and equipment
- site environment requirements
- emergency procedures
- mine operational procedures
- agglomeration drum operations and components
- conveyor operations and components
- pump operations and components
- plant and equipment limitations and operating parameters
- conveyor, pump and agglomeration drum maintenance requirements
- isolation standards and equipment isolation procedures
- confined space entry procedures
- metallurgical and technical data (basic)

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 operating an agglomeration circuit • implementation of requirements, procedures and techniques for the safe, effective and efficient operation of an agglomeration circuit • working with others to undertake and complete the operating an agglomeration circuit that meets all of the required outcomes • consistent timely completion of operating an agglomeration circuit 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 operation of an agglomeration circuit
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 • government licences to operate • codes of practice • management plans • OHS policy • operational procedures • safe working procedures (or equivalent)
Equipment (feed or downstream) may include:	• crushing plants • feed conveyors • discharge conveyors • stacking circuit conveyors • stinger conveyors • agglomeration drum • leach solution delivery pumps • leach solution dosing pumps • binding agent delivery systems
Auxiliary equipment may include:	• mobile plant and equipment • lubrication systems • hydraulic equipment • sump pumps
Ready for operation includes:	• with no interlocks to prevent the start-up of equipment • with no safety devices activated • with no blockages • with no damage • in working order
Binding agent may include:	• cement

	- hydrated lime - cement kiln dust (fly ash) - bentonite - silicates - high molecular flocculants - required to maintain the required pH of the product discharging the agglomeration circuit - a set ratio to feed ore to agglomeration circuit
Leaching solution may include:	- water - cyanide solution - sulphuric acid solution
Alarms may include:	- equipment drives such as: - isolator alarms - electrical faults - thermal overloads - variable Speed Drive faults - temperature - safety devices such as: - lanyards - emergency stop buttons - belt drift indicators - belt rip indicators - under speed sensors - blocked chute indicators - dosing rate variations: - high flow - low flow - flow control valve failure - leak detection - delivery pump fault - control system communication faults
Physical tests may include:	- strength - stability - structure - moisture content
Laboratory tests include tests for:	- agglomeration/percolation properties - submersion - column leach tests
Maintenance may include:	- isolation and tagging - restoration after isolation

	• operational cleaning requirements • work carried out in accordance with approved maintenance manual or schedule
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Unit Sector(s)

Processing

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.