



**Australian Government**

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

# **RIIPBE307A Conduct pressure oxidation**

**Release: 1**

## RIIPBE307A Conduct pressure oxidation

### Modification History

Not applicable.

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers the conduct of pressure oxidation in the metalliferous mining industry. It includes planning and preparing for the pressure oxidation process, starting up equipment in sequence, operating and monitoring equipment, 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.
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### Application of the Unit

<b>Application of the unit</b>	This unit is appropriate for those working in an operational role at worksites within: <ul style="list-style-type: none"> <li>• Metalliferous mining</li> </ul>
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### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## 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 pressure oxidation process	1.1. Access, interpret and apply <b>compliance documentation</b> relevant to the work activity 1.2. Receive, interpret and clarify shift changeover details 1.3. Communicate with other personnel 1.4. Select personal protective equipment appropriate for work activities 1.5. Select appropriate type of <b>auxiliary equipment</b> for work activities 1.6. Perform equipment <b>pre-start checks</b> 1.7. Identify, address and report potential risks and hazards 1.8. Identify, address and report <b>environmental issues</b> 1.9. Adhere to emergency procedures to ensure safety of personnel and <b>plant</b>
2. Start-up equipment in sequence	2.1. Carry out <b>start-up procedures</b> and complete start-up checks according to plant configurations and system requirements 2.2. Confirm plant is operational
3. Operate and monitor equipment	3.1. <b>Read</b> and interpret data from equipment <b>indicators</b> to determine oxidation progress 3.2. Continuously inspect and <b>monitor</b> plant to identify oxidation defects and potential problems and take appropriate action 3.3. Adjust equipment to <b>optimise</b> oxidation performance and product quality 3.4. Control feed to oxidation equipment 3.5. Add oxygen to approved operating parameters 3.6. Carry out minor maintenance to maintain condition of the equipment 3.7. Complete all required documentation clearly, concisely and on time 3.8. Pass on end of shift information to oncoming shift
4. Conduct housekeeping activities	4.1. Clean plant to maintain condition of all equipment to ensure safe and efficient operations 4.2. Manage and report hazards to maintain a safe working environment
5. Shutdown in sequence and/or	5.1. Shutdown or isolate equipment based on process and safety requirements

ELEMENT	PERFORMANCE CRITERIA
isolate equipment	5.2. Perform <i>post shutdown</i> or isolation checks

## Required Skills and Knowledge

### 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 pressure oxidation:

- apply legislative, organisation and site requirements and procedures for conducting pressure oxidation
- handle hazardous goods
- identify and manage hazards
- apply lifting techniques (manual, automated)
- maintain records
- report defects
- apply safe work practices
- 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 pressure oxidation:

- break-down procedures
- contaminants
- depressant identification and activator principles
- emergency procedures
- environmental procedures
- equipment processes, limitations and operating parameters
- equipment safety requirements
- hazardous good procedures and consequences of spills
- high pressures dangers and characteristics
- identifying repair requirements
- isolation procedures
- metallurgical and technical data
- OHS procedures
- operational procedures and checks
- pressure oxidation plant (basic) and process
- site procedures

**REQUIRED SKILLS AND KNOWLEDGE**

- types of ores and grades (basic)

## 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 conduct pressure oxidation</li> <li>• implementation of requirements, procedures and techniques for the safe, effective and efficient completion of pressure oxidation</li> <li>• working with others to undertake and complete the pressure oxidation in a way that that meets all of the required outcomes</li> <li>• consistent timely completion of pressure oxidation that safely, effectively and efficiently meets the required outcomes</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>• 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.</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> <li>• Customisation of assessment and delivery environment to sensitively accommodate</li> </ul>



	<p>cultural diversity.</p> <ul style="list-style-type: none"> <li>• Aboriginal people and other people from a non English speaking background may have second language issues.</li> <li>• 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.</li> </ul>
<b>Method of assessment</b>	<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</li> <li>• observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>• implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes</li> <li>• consistent achievement of required outcomes</li> </ul> </li> <li>• first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>• working with others to undertake and complete the pressure oxidation</li> </ul> </li> </ul>
<b>Guidance information for assessment</b>	<p>Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.</p>

## 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. <b>Bold italicised</b> 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, organisational and site requirements and procedures</li> <li>• manufacturer's guidelines and specifications</li> <li>• Australian standards</li> <li>• Employment and workplace relations legislation</li> <li>• Equal Employment Opportunity and Disability Discrimination legislation</li> </ul>
<p><b>Legislation</b> may include Acts and regulations dealing with:</p>	<ul style="list-style-type: none"> <li>• mining safety and health</li> <li>• mine inspection</li> <li>• OHS</li> <li>• explosives</li> </ul>
<p><b>Auxiliary equipment</b> may be anything that is portable and mobile that is not part of the fixed infrastructure, and may include:</p>	<ul style="list-style-type: none"> <li>• gantry cranes and attachments</li> <li>• hand and power tools</li> <li>• pump systems</li> </ul>
<p><b>Pre-checks</b> may include:</p>	<ul style="list-style-type: none"> <li>• availability of equipment</li> <li>• detection of conditions that are unusual</li> <li>• fluid levels</li> <li>• job requirements</li> <li>• personnel availability</li> <li>• work through plant</li> </ul>
<p><b>Environmental issues</b> may include:</p>	<ul style="list-style-type: none"> <li>• drainage</li> <li>• dust (dump)</li> <li>• emissions</li> <li>• flora and fauna</li> <li>• hazardous chemicals</li> <li>• noise</li> <li>• recycling</li> <li>• run-off</li> <li>• spills</li> <li>• waste management and disposal</li> <li>• water quality</li> </ul>

<b>Plant</b> may include:	<ul style="list-style-type: none"> <li>• conditioning tanks and columns</li> <li>• oxygen tanks</li> </ul>
<b>Start-up procedures</b> may include of:	<ul style="list-style-type: none"> <li>• cameras and monitors</li> <li>• distribution control system (DCS)</li> <li>• interlocks</li> <li>• isolations</li> <li>• pipes and flanges</li> <li>• pumping system</li> <li>• valves</li> <li>• visual and audio warning devices and lights</li> <li>• water systems</li> </ul>
<b>Indicator readings</b> may measure:	<ul style="list-style-type: none"> <li>• concentrations</li> <li>• densities</li> <li>• heat</li> <li>• levels</li> <li>• pressure flows</li> </ul>
<b>Monitoring</b> may include the checking of:	<ul style="list-style-type: none"> <li>• air flows</li> <li>• blockages and spillage's</li> <li>• feed rates</li> <li>• power</li> <li>• pressures</li> <li>• temperatures</li> <li>• wear and tear</li> </ul>
The methods used to <b>optimise</b> the plant may include:	<ul style="list-style-type: none"> <li>• adjustment to oxygen levels</li> </ul>
<b>Post-shutdown checks</b> are like pre-start checks.	

## Unit Sector(s)

Beneficiation

## Competency field

Refer to Unit Sector(s).

## **Co-requisite units**

Not applicable.