



Australian Government

Department of Education, Employment and Workplace Relations

RIIBLA402A Monitor and control the effects of blasting on the environment

Release: 1

RIIBLA402A Monitor and control the effects of blasting on the environment

Modification History

Not applicable.

Unit Descriptor

This unit covers the monitoring and controlling of the effects of blasting on the environment in resources and infrastructure industries. It includes developing monitoring and control strategies, implementing monitoring systems and reviewing strategies.

Application of the Unit

This unit is appropriate for those working in operational or technical specialist roles, within:

- Civil construction
- Coal mining
- Extractive industries
- 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

<p>Elements describe the essential outcomes of a unit of competency.</p>	<p>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.</p>
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<p>1. Develop strategies to control the effects of blasting on the environment</p>	<p>1.1. Access, interpret and apply <i>compliance documentation</i> relevant to monitoring and control of the effects of blasting on the environment</p> <p>1.2. Identify and evaluate the environmental hazards and controls to minimise the impact on the environment of ground <i>vibration</i> resulting from blasting</p> <p>1.3. Identify and evaluate the environmental hazards and controls to minimise the impact on the environment of <i>flyrock</i> resulting from blasting</p> <p>1.4. Identify and evaluate the environmental hazards and controls to minimise the impact on the environment of <i>air blast, noise and overpressure</i> resulting from blasting</p> <p>1.5. Identify and evaluate the environmental hazards and controls to minimise the impact on the environment of <i>air pollution and dust</i> resulting from blasting</p> <p>1.6. Identify and evaluate the environmental hazards and controls to minimise the impact on the environment of <i>water pollution</i> resulting from blasting</p> <p>1.7. Identify and analyse the objectives and criteria for safe and effective blast monitoring</p> <p>1.8. Evaluate and select <i>monitoring device</i> options</p> <p>1.9. Prepare procedures for the installation, establishment and operation of <i>monitoring</i> systems</p> <p>1.10. Formulate the monitoring system <i>maintenance</i> program and procedures</p> <p>1.11. Determine procedures for the audit, review and updating of the monitoring system</p>
<p>2. Implement environment monitoring systems</p>	<p>2.1. Implement procedures for monitoring, recording and reporting on environmental controls according to statutory requirements</p> <p>2.2. Implement procedures for the installation and operation of monitoring systems and equipment</p> <p>2.3. Implement procedures for the collection</p>

	<p>and analysis of environmental data</p> <p>2.4. Process, record and report monitoring system data in accordance with site procedures and statutory requirements</p> <p>2.5. Interpret measured data, compare with statutory and site requirements and implement identified actions</p>
<p>3. Review strategies</p>	<p>3.1. Audit the effectiveness of the environmental control system in order to ensure that blasting standards comply with statutory and environmental management plan requirements</p> <p>3.2. Audit the effectiveness of the environmental control system in order to ensure that monitoring systems operate to statutory requirements</p> <p>3.3. Audit the effectiveness of the environmental control system in order to ensure that recording systems are maintained accurately and data are processed in accordance with environmental management plan requirements</p> <p>3.4. Review the monitoring system to ensure that standards remain appropriate</p>

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 monitor and control the effects of blasting:

- apply legislative, organisation and site requirements and procedures
- access, interpret and apply safety rules and procedures
- plan and coordinate work
- assess the risks and hazards attached to explosives in the environment
- interpret the impact of blast design on ground vibration, air blast and flyrock
- interpret and apply manufacturer's instructions
- audit data and apply to blasting strategy

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 monitor and control the effects of blasting:

- legislative and statutory requirements and procedures
- sources of legislation
- differing geological features and conditions' effect on ground vibration, air blast and flyrock
- portable monitoring equipment characteristics, technical capabilities and limitations
- maintenance surveys and procedures
- audit and review processes and techniques
- procedures for estimation of ground vibration levels
- procedures for estimation of blast overpressure

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>Overview of assessment</p>	
<p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</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"> • knowledge of the requirements, procedures and instructions for the monitoring and control of the effects of blasting • implementation of procedures and techniques for the safe, effective and efficient monitoring and control of the effects of blasting • working with others to plan, prepare and conduct the monitoring and control of the effects of blasting • provision of clear and timely instruction and supervision by the individual of those involved in the monitoring and control of the effects of blasting • evidence of the consistent successful monitoring and control of the effects of blasting
<p>Context of and specific resources for assessment</p>	<ul style="list-style-type: none"> • 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. • 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

	<p>cultural diversity.</p> <ul style="list-style-type: none"> • Aboriginal people and other people from a non English speaking background may have second language issues. • 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. • 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	<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"> • written and/or oral assessment of the candidate's required knowledge • observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • implementation of appropriate procedures and techniques for the safe, effective and efficient achievement of the required outcomes • consistently achieving the required outcomes • first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> • working with others to plan, prepare and conduct the monitoring and control of the effects of blasting • provision of clear and timely instruction and supervision by the individual of those involved in the monitoring and control of the effects of blasting
Guidance information for assessment	<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. 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>Relevant compliance documentation may include:</p>	<ul style="list-style-type: none"> • legislative, organisation and site requirements and procedures • manufacturer's guidelines and specifications • Australian standards • code of practice • Employment and workplace relations legislation • Equal Employment Opportunity and Disability Discrimination legislation
<p>Mechanisms which may contribute to ground vibration may include:</p>	<ul style="list-style-type: none"> • peak particle velocity • vibration • frequency • damage criteria
<p>Vibration may:</p>	<ul style="list-style-type: none"> • contribute to, or result in damage to, cracking and collapse of structures
<p>Vibration controls may include:</p>	<ul style="list-style-type: none"> • vibration monitoring • establishment of vibration limit
<p>Flyrock may result in:</p>	<ul style="list-style-type: none"> • injury to people • damage to buildings and services • scatter of materials
<p>Air blast, noise and over pressure may result in:</p>	<ul style="list-style-type: none"> • structural and building damage • public reaction
<p>Mechanisms which may contribute to air blast, noise and over pressure may include:</p>	<ul style="list-style-type: none"> • peak values • frequency range • damage criteria
<p>Air blast, noise and over pressure controls may include:</p>	<ul style="list-style-type: none"> • the establishment of noise limits • overpressure limits • measurement and recording • provision and testing of monitoring equipment
<p>Air pollution may include:</p>	<ul style="list-style-type: none"> • dust • toxic gases, including: • oxides of nitrogen • carbon monoxide

	<ul style="list-style-type: none"> • hydrocarbons • combination of toxic gases
Dust control measures may include:	<ul style="list-style-type: none"> • establishment of a dust control program • monitoring of dust • identification and responses to dust problems • selection of appropriate control measures
Design criteria for portable monitoring devices may include:	<ul style="list-style-type: none"> • battery capacity • battery recharge requirements • statutory compliance provision for: • calibration • size • weight • ease of operation • robust construction
Defects to monitoring devices may include:	<ul style="list-style-type: none"> • inferior design • deterioration of materials • inadequate quality of manufacture • physical damage • water damage
Monitoring may include:	<ul style="list-style-type: none"> • portable blasting seismographs • sound level meters • dust sampling tubes • video and still cameras
Maintenance may include:	<ul style="list-style-type: none"> • inspection • servicing • repair

Unit Sector(s)

Blasting

Competency field

Refer to Unit Sector(s).

Co-requisite units

Not applicable.