



Australian Government

RIIBLA302E Conduct shotfiring operations in underground coal mines

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 5.0.

Application

This unit describes the skills and knowledge required to conduct shotfiring operations in underground coal mines in coal mining. It includes supervising storage and transport of explosives and accessories, conducting blasts and carrying out post-blast activities.

It applies to those working in operational roles. They generally work under minimal supervision to undertake a broad range of skilled applications in varied work contexts, using some discretion and judgement in selecting equipment, services or contingency measures.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Coal mining (underground)

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to conduct underground shotfiring operations	1.1 Obtain, interpret, confirm and clarify blasting management plan and blast plan requirements and job requirements 1.2 Access, interpret and apply shotfiring documentation and confirm work activity is compliant 1.3 Identify, manage and report potential hazards, risks and environmental issues according to legislative and site requirements 1.4 Select and wear personal protective equipment according to site requirements 1.5 Obtain and interpret emergency procedures and confirm steps

ELEMENT	PERFORMANCE CRITERIA
	required to respond to emergencies 1.6 Coordinate vehicle, equipment and personnel support requirements within scope of own role 1.7 Access, interpret and apply environmental, geological and survey data according to job requirements 1.8 Carry out calculations required for pattern design, loading and tying in shots 1.9 Complete pattern design according to job requirements 1.10 Carry out briefings according to job and site requirements 1.11 Identify and confirm explosives and accessories according to job requirements
2. Supervise storage and transport of explosives and accessories	2.1 Order and obtain explosives and accessories according to job requirements 2.2 Confirm explosives and accessories are stored according to site requirements 2.3 Confirm inventory control systems are maintained according to site requirements 2.4 Confirm explosives and accessories are transported to blast area and segregate according to legislative requirements 2.5 Confirm that explosives are not left unattended 2.6 Identify and dispose of deteriorated or out-of-date explosives and accessories according to job and site requirements
3. Prepare for charging	3.1 Identify, manage and report potential hazards and risks according to legislative and site requirements 3.2 Secure blast area according to blast plan and site requirements 3.3 Establish and communicate access routes to shot area for authorised persons and vehicles 3.4 Identify hole locations and non-conforming conditions 3.5 Set up charging equipment according to job and site requirements 3.6 Prepare holes for charging according to job and site requirements
4. Charge holes	4.1 Supervise blast personnel during loading operations within scope of own role 4.2 Prime and charge holes according to loading plan 4.3 Confirm blast holes are charged according to loading plan and identify non-conforming conditions 4.4 Apply explosion inhibitor according to blast plan 4.5 Confirm blast holes are stemmed according to blast plan 4.6 Clear area and isolate/barricade blast area according to site requirements 4.7 Test equipment and accessories according to manufacturer

ELEMENT	PERFORMANCE CRITERIA
	specifications and site requirements 4.8 Maintain records according to site requirements 4.9 Conduct blast monitoring according to site requirements
5. Conduct blast	5.1 Carry out pre-blasting procedures and establish exclusion zone according to blast plan 5.2 Tie in pattern and check according to blast plan 5.3 Evaluate proposed firing time against potential factors impacting the blast 5.4 Carry out firing clearance processes according to blast plan 5.5 Initiate blast 5.6 Check shot and complete records according to blast plan
6. Complete post blast activities	6.1 Carry out post blast inspection 6.2 Secure firing circuits and initiation device according to manufacture specifications and site requirements 6.3 Report blasting completion to relevant personnel 6.4 Carry out post-blast coordination and declare area safe for re-entry according to site requirements 6.5 Inspect site and address non-conformities according to site requirements 6.6 Identify and dispose of surplus, damaged and deteriorated explosives and detonators according to manufacturer specifications and site requirements 6.7 Confirm emergency services are advised of disposal activities according to site procedures 6.8 Complete written reports
7. Carry out equipment maintenance	7.1 Carry out inspection and required maintenance according to manufacturer specifications and site requirements 7.2 Complete maintenance records according to site requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	Calculates measurements, masses and dimensions
Reading	Identifies and interprets information from workplace documentation

SKILL	DESCRIPTION
Self-management	Monitors and minimises own exposure to worksite risks and hazards during activities

Unit Mapping Information

Supersedes and is equivalent to RIIBLA302D Conduct shotfiring operations in underground coal mines.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIBLA302E Conduct shotfiring operations in underground coal mines

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- conduct shotfiring operations in underground coal mines on at least two occasions, including:
 - planning and preparing for shotfiring
 - completing pattern designs, including requirements for:
 - loading
 - hole spacing and depth
 - stemming
 - wiring
 - supervising storage and transport of explosives and accessories
 - preparing for charging and charging holes
 - conducting blasts
 - completing post-blast activities
 - carrying out equipment maintenance.

During the above, the candidate must:

- locate and apply relevant documentation and procedures and confirm work activity is compliant
- work effectively with others to undertake and complete shotfiring operations in underground coal mines that meet all of the required outcomes, including:
 - complying with reporting requirements and procedures
 - communicating clearly and concisely with others to:
 - receive and clarify work instructions
 - communicate requirements within scope of own role.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- key legislation required to conduct shotfiring operations in underground coal mines, including those relating to:
 - storage and segregation of explosives
 - misfires
 - safety and health requirements
 - permitted explosives categories
- key procedures and documentation required to conduct shotfiring operations in underground coal mines, including:
 - blast management plan
 - blast plan
 - loading plan
 - Australian standards and code of practice relating to shotfiring operations
 - site and equipment safety procedures
 - personal safety and site emergency procedures
 - planning processes
- site environmental requirements and constraints, including those relating to:
 - chemicals
 - airborne contaminants, including dust and fumes
 - noise, vibration and airblast overpressure
 - hot, reactive and fibrous ground
- types, physical and technical characteristics, uses and limitations of explosives and accessories and protection measures associated with their use, including:
 - initiation systems
 - disposal methods
- types and causes of non-conforming conditions and non-conformities and associated inspection and management techniques, including:
 - misfires
 - delayed blasts
 - blockages
 - break throughs
 - deviations
 - undercuts
 - ground conditions
 - ventilation
 - water/wet holes
- techniques for analysing and applying site geological and survey data, including site geological and survey information

- principles and techniques for selecting appropriate explosives to meet site conditions
- techniques for clearing and isolating blast areas, including barricades and warning signs
- monitoring and review processes and techniques
- principles and techniques for identifying and responding to relevant hazards and emergencies
- techniques for coordinating job activities with others.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to conduct shotfiring operations in underground coal mines
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations (RTOs) 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- possessing and maintaining a current shotfirer's licence issued by a state/territory regulatory body endorsed for the applicable type of blasting
- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and

- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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