



Australian Government

RIIMCU302F Construct and maintain ventilation devices

Release: 1

RIIMCU302F Construct and maintain ventilation devices

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 construct and maintain ventilation devices in underground coal mining, including stoppings, regulators, overcasts, undercasts, seals and bulkheads.

It applies to those working in operational roles. They generally work under minimal supervision to undertake a broad range of tasks 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 construct and maintain ventilation devices	1.1 Obtain, interpret, clarify and confirm work requirements 1.2 Access, interpret and apply documentation required to construct and maintain ventilation devices 1.3 Identify and address potential risks, hazards and environmental issues and implement control measures according to site requirements 1.4 Select and wear personal protective equipment according to site requirements 1.5 Obtain, transport and prepare materials and resources according to job requirements

ELEMENT	PERFORMANCE CRITERIA
	1.6 Obtain and interpret emergency procedures and identify steps required to respond to emergencies
2. Construct ventilation devices	2.1 Coordinate activities with others within scope of own role 2.2 Prepare work site according to site requirements 2.3 Construct ventilation device according to site requirements 2.4 Monitor hazards and risks and confirm safe operation of plant and equipment 2.5 Complete work plan according to job requirements
3. Maintain ventilation devices	3.1 Carry out inspections according to site requirements 3.2 Carry out maintenance tasks according to manufacturer specifications and site requirements 3.3 Carry out housekeeping activities according to site requirements 3.4 Complete records and reports 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 basic measurements including mass and dimensions
Reading	Identifies and interprets information from workplace documentation and legislation
Self-management	Monitors and minimises own exposure to worksite risks and hazards during activities
Writing	Completes records using sector-specific vocabulary, grammatical structures and conventions

Unit Mapping Information

Supersedes and is equivalent to RIIMCU302E Construct and maintain ventilation devices.

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 RIIMCU302F Construct and maintain ventilation devices

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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:

- construct and maintain ventilation devices on at least two occasions, including:
 - applying basic construction skills to conduct remedial work to make workplace safe and to identify potential strata hazards (roof and ribs)
 - completing operations on the following devices in an underground coal mine:
 - stoppings or regulators; and
 - overcasts or undercasts; and
 - seals or bulkheads
 - using materials for devices, including, but not limited to:
 - poles/props/ply/mesh
 - pre-fabricated steel
 - plaster/cementitious products or bricks
 - pumping equipment
 - foam or other secondary materials as required
- establishing ventilation at construction site and monitoring mine atmosphere.

During the above, the candidate must:

- locate and apply relevant documentation, policies and procedures and confirm work activity is compliant
- implement the requirements, procedures and techniques for constructing and maintaining ventilation devices, including:
 - reading, interpreting, applying and communicating technical information
 - identifying and minimising environmental issues, potential hazards and risks
 - selecting and using relevant tools and equipment
 - complying with environmental requirements and constraints
 - identifying work requirements

- applying diagnostic and fault finding techniques
- applying construction techniques
- monitoring and responding to local environmental conditions (including ventilation, gas levels, spontaneous combustion and strata conditions)
- inspecting and maintaining devices, equipment and materials
- work effectively with others to construct and maintain ventilation devices in a way that meets required outcomes, including:
 - organising work activities to meet task requirements
 - communicating clearly and concisely with others to receive and clarify work instructions
 - complying with reporting requirements and procedures
 - determining coordination requirements throughout work activities, including with other work groups.

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 construct and maintain ventilation devices
- key policies, procedures and documentation required to construct and maintain ventilation devices, including required layouts, plans and operational safety systems
- mine geology, environmental data and survey information related to ventilation devices, including:
 - ventilation/gas data
 - deputy reports
 - geological data
 - survey data
 - spontaneous combustion management plans
- types, uses, and limitations of ventilation circuits, ventilation devices and sealing systems, including the following device types:
 - stoppings, including:
 - short-term
 - long-term
 - coffin box
 - machine doors
 - seals
 - bulkheads
 - balance chambers
 - regulators
 - overcasts
 - undercasts

- principles and techniques for applying ventilation device construction processes and techniques, including for the following construction equipment types:
 - grout pumps
 - cement mixers
 - compressed air drills
 - borers
 - hoses
 - hand tools
 - scaffolding
 - levels
 - water traps
 - sampling lines
 - pressure gauges
 - gas drainage lines
 - shut off valves
 - oxygen breathing apparatus
 - gas detection equipment
- ventilation device equipment and material characteristics and limitations, including transportation requirements, for device materials, including:
 - poles/props/ply/mesh
 - pre-fabricated steel
 - plaster/cementitious products/bricks
 - pumping equipment
 - foam
- principles, processes and techniques for managing hazards, including:
 - strata
 - dust
 - gases
 - poor ventilation
 - spontaneous combustion
- principles and techniques for identifying and responding to relevant hazards and emergencies, including those related to:
 - irrespirable atmospheres
 - noxious atmospheres
 - flammable and explosive mixtures
 - fires
- site requirements for completing maintenance records and reporting requirements
- techniques for coordinating and communicating 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 construct and maintain ventilation devices
- 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:

- 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 Companion Volume 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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