



**Australian Government**

**Assessment Requirements for RIUND601D  
Establish and maintain the ventilation  
management system**

**Release: 2**

# Assessment Requirements for RIIUND601D Establish and maintain the ventilation management system

## Modification History

Release	Comment
1	This unit replaces RIIUND601A Establish and maintain the ventilation management system
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

## Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant legislation, documentation, policies and procedures
- implements the requirements, procedures and techniques for the safe, effective and efficient establishment and maintenance of the ventilation management system including:
  - accessing and analysing archival and historical ventilation information
  - interpreting and applying mathematical and scientific theorems/laws related to ventilation
  - accessing, evaluating and applying design criteria for ventilation systems and devices
  - interpreting computer spreadsheets and ventilation modelling/simulations
  - accessing, evaluating and applying data from monitoring systems and equipment
  - establishing ventilation training requirement, programs, systems and procedures
- demonstrates completion of the establishment and maintenance of the ventilation management system that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
  - identifying, collecting, collating and evaluating data, events and activities that impact on ventilation systems
  - identifying and evaluation limitation of ventilations control devices and systems
  - designing and developing the ventilation management system
  - establishing technical procedures relating to ventilation
  - incorporating mine ventilation plan into work activity

- conducting enquiries/investigations throughout the audit of ventilation management plan
- providing solutions to noncompliance or other discrepancy
- preparing reports on ventilations management plan audits

## Knowledge Evidence

The candidate must demonstrate knowledge in establishing and maintaining the ventilation management system through:

- methods of mine ventilation and their applications/limitations including:
  - exhaust/force
  - antitropical
  - homotropical
  - flank returns
  - ascensional/descensional
  - bleeder
  - ZUY systems
  - other combinations
- identifying methods of panel ventilation and their applications/limitations including:
  - homotropical and antritropical auxiliary fans
  - coursed ventilation (narrow side/wide side)
  - machine mounted scrubber systems
  - compressed air venturis
  - bleeders
- impact of mining techniques and mine and panel design on ventilation
- impact of coal characteristics and coal seam gradients on mine ventilation design
- principles and impacts of the ventilation system of gas drainage, spontaneous combustion, outburst and windblast
- mine gases; the types and their characteristics under varying circumstances, sources, physiological effects and methods of detection
- dust, fumes and other particulate matter; the types, sources, physical and physiological effect, and control/mitigation methods
- mine fires; the types, sources of ignition, possible effects on the ventilation circuit and prevention/control/mitigation methods
- mine explosions; types, ignition sources, possible effects on the ventilation circuit and prevention/control/mitigation methods
- pressure changes; causes, the impacts on the ventilation system, and responses (to include the causes and effects of natural ventilation and recirculation)
- heat/humidity; the sources and factors which may impact ventilation and personnel
- mine roadways and shafts; their design parameters and impact of mine ventilation
- mine fans; fan laws, fan types, performance characteristics, configurations, applications and limitations

- ventilation control devices; the types, purposes, design criteria and specifications, distribution/placement criteria and limitations
- de-gassing; methods of control – including brattice, auxiliary fans, compressed air venturis, sails, hurdles and bleeders
- ventilation networks and individual circuit design criteria, specifications and design processes
- fixed ventilation monitoring systems types, characteristics, uses and limitations
- portable monitoring equipment, types, characteristics, uses and limitations
- functions, capabilities, advantages, limitation and uses of computer modelling and simulation techniques
- computer-based systems for mine environmental analysis
- ventilation management plan development requirements and processes
- ventilation surveys; the types, frequency and method for conducting including pressure/quantity/temperature and gas/dust
- processes and techniques for determining alarms and trigger points/levels
- general uses and application of ventilation theory

## Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit is best assessed in the context of this sector's 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 this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,
- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current\* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,

- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 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.	

\*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 frequent site assessments across various locations.

\*\*Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

## Links

Companion Volume implementation guides are found in VETNet -

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