



Australian Government

**Assessment Requirements for UEERA0026
Design mechanical ventilation/exhaust
systems and select equipment**

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- developing outlines of alternative designs
- developing the design within the safety, regulatory, functional requirements and budget limitations
- documenting and presenting design effectively
- successfully negotiating design alteration requests
- obtaining approval for final design
- dealing with unplanned events
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
- designing mechanical ventilation/exhaust systems and select equipment
- preparing to design mechanical ventilation/exhaust systems and select equipment.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- exhaust systems design, safe working practices and relevant standards, codes and regulations, including:
 - relevant codes and regulations:
 - health and safety
 - noise
 - smoke
 - fire
 - hazard identification
 - system types:
 - applications

- application flow charts
- system requirements
- hazard identification
- effluent types and removal
- relationship with smoke spill systems
- supply air dilution applications
- natural ventilation applications
- fan assisted exhaust applications
- replenishment of exhaust air
- system components
- duct design:
 - static, velocity and total pressure
 - pressure drop
 - fouling
 - transitions
 - elbows
 - fan position and mounting
 - noise and noise attenuation
 - requirements for access and maintenance
 - system integrity
- fan and motor selection:
 - applications
 - suitable fan types
 - motor rating and suitability
 - balancing the fan duct system
 - flame proofing
- filters and filter selection:
 - types and applications
 - capture velocity
- outlet design and location:
 - prevailing winds
 - position relative to air intakes
 - weather and bird proofing
- cycling/operation control:
 - applications
 - code/regulation requirements
 - monitoring of contaminants
 - contaminant detection
- problem-solving techniques
- relevant job safety assessments or risk mitigation processes

- relevant WHS/OHS legislated requirements
- relevant workplace budget, quality, policies and procedures
- relevant workplace documentation.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, facilities and equipment currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>