



Australian Government

**Assessment Requirements for UEERA0010
Commission complex heating, ventilation
and air conditioning (HVAC) systems**

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:

- identifying system design operating parameters
- measuring and adjusting system components and controls to provide optimum system performance
- ensuring system operates within regulatory requirements
- documenting adjustment settings with established procedures
- dealing with unplanned events
- applying relevant legislations, industry standards, codes of practice and regulations
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including:
 - applying safe working practices
 - applying sustainable energy principles and practices
 - hazard identification and reporting
 - implementing risk control measures
- commissioning complex heating, ventilation and air conditioning (HVAC) systems
- completing and reporting on commissioning activities
- determining need to test or measure live work
- isolating circuits
- preparing to commission complex HVAC systems
- using relevant tools, equipment, testing and measuring devices.

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:

- complex HVAC system commissioning, safe working practices and relevant standards, codes and regulations, including:
 - commissioning fundamentals:

- building specifications/requirements/responsibilities
- design and as installed drawings
- building codes
- local government regulations
- design conditions
- pre-commissioning checks
- calibration of instruments
- commissioning procedures
- data collection, recording and documentation
- reporting procedures
- air systems:
 - factors affecting the design of ductwork systems
 - types of ductwork systems
 - static, velocity and total pressure
 - air testing and balancing
 - air flow
 - pressure
 - temperature
- fans:
 - types and characteristics
 - fan laws
 - fan and system curves
 - fan testing
- air balancing:
 - equipment, instruments and procedures
 - leakage testing
- overview of noise in duct systems:
 - noise sources in duct systems
 - attenuation
 - methods of control
- system capacity calculations
- hydronic systems:
 - hydronic instruments
 - fluid flow
 - pumps: pump curves and system curves
 - pump testing
 - capacity calculations
- plant and equipment:
 - controls

- heat exchangers
- chillers
- boilers
- cooling towers
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant tools, equipment and testing devices
- relevant WHS/OHS legislated requirements, including:
 - environmental and sustainable energy principles and practices
- relevant workplace documentation
- relevant workplace policies and procedures
- system operating parameters.

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 workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated 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 other simulations
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) 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>